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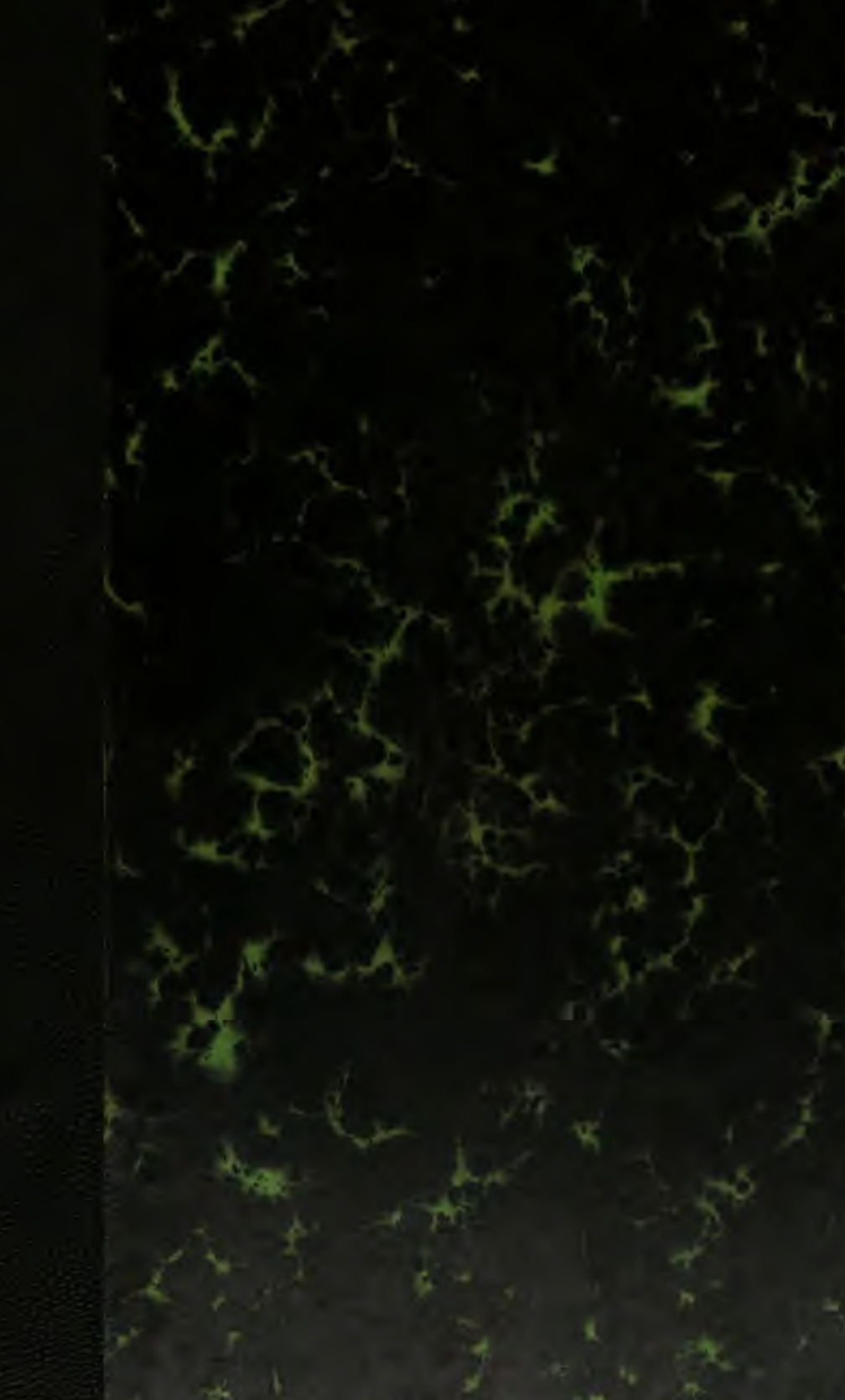
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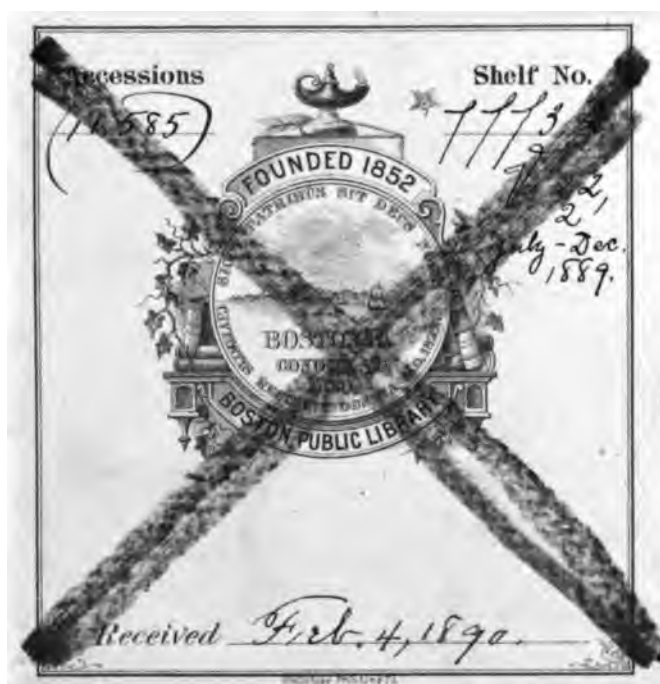
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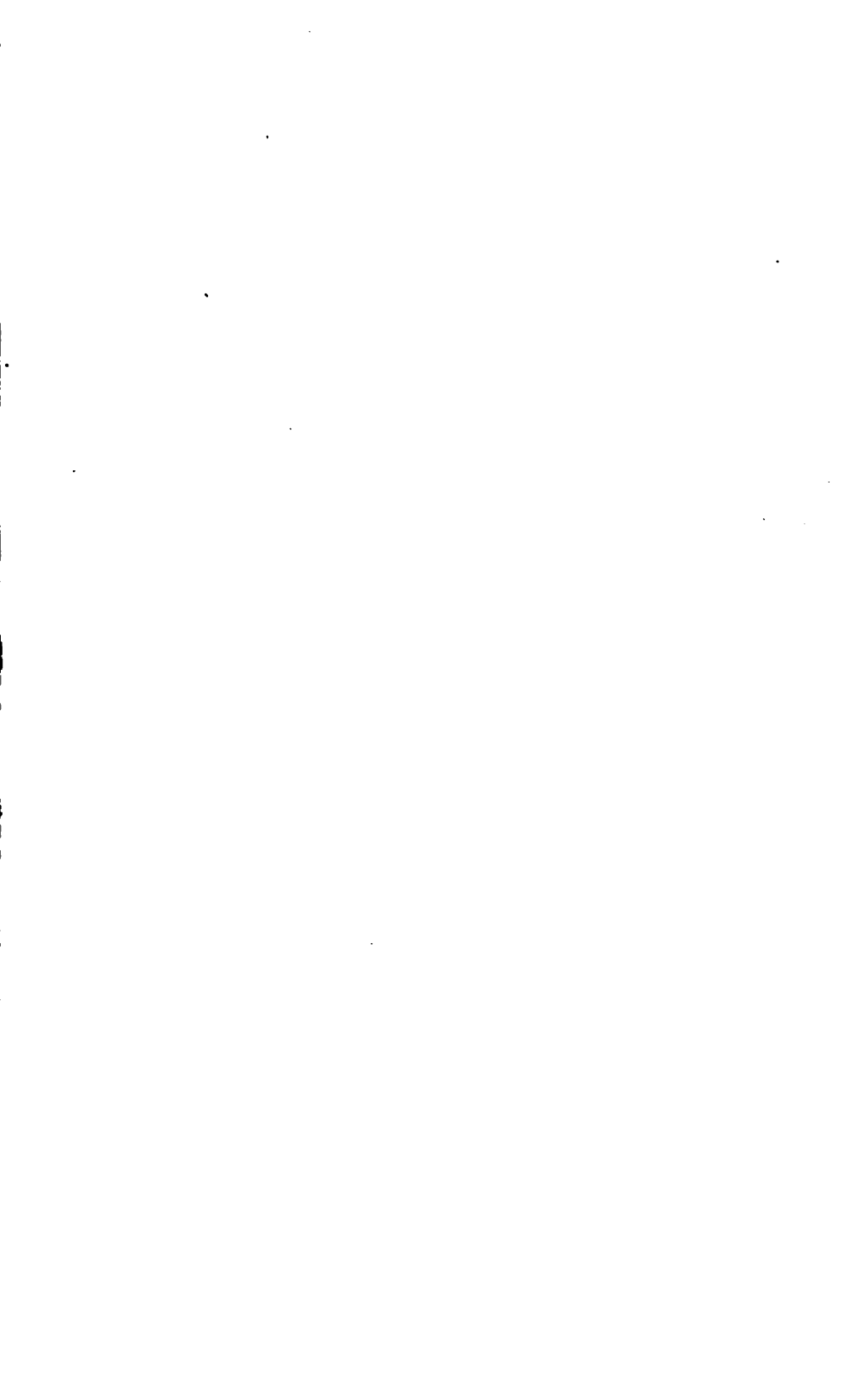
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A MONTHLY JOURNAL

EDITED BY
PAUL F. MUNDE, M.D.

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JULY, 1889.



New York:
WILLIAM WOOD & COMPANY
56 & 58 LAFAYETTE PLACE

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England, May 25, 1887.
Canada, June 6, 1887.

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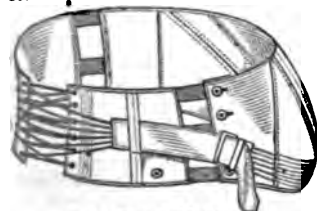
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THE AMERICAN
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AND
DISEASES OF WOMEN AND CHILDREN.

VOL. XXII.

JULY, 1889.

No. 7.

ORIGINAL COMMUNICATIONS.

**MY EXPERIENCE WITH THE FLAP-SPLITTING OPERATION
FOR LACERATED PERINEUM.**

BY
PAUL F. MUNDE.

(With one colored plate and two woodcuts.)

SINCE the revival by Lawson Tait, several years ago, of the flap-splitting operation for lacerated perineum, a number of descriptions of the operation have been published by Sanger, Zweifel, Rokitansky, Martin, and others, mostly Germans, and the results reported by these operators have excited much interest and attention. In spite of the diagrammatic illustrations which accompanied most of these articles, the technique and principle of the operation seem to have been but imperfectly understood—a fact which appears almost incomprehensible to any one who has ever seen the operation or performed it himself, and is familiar with the extreme simplicity of its detail. That such is nevertheless the case has been demonstrated to me by the frequent requests I receive, even from gynecologists, to be allowed to see me perform the operation. In order to assist in making the description more intelligible, I have had the accompanying colored plates drawn from nature by Dr. H. Macdonald, of this city.

My first knowledge of this operation was gained when I saw Mr. Lawson Tait do it in his private hospital at Birmingham on July 24th, 1886. No special explanation was given at the time by Mr. Tait of the technique of the operation. He did it very rapidly, probably occupying not more than five or six minutes in all. Still, I was able to get a very good idea of the method, as will be seen from the description I gave of it in the report of my trip to Europe, published in the September, 1886, number of the *AMERICAN JOURNAL OF OBSTETRICS*, p. 926. For ease and rapidity of execution this operation certainly left nothing to be desired. Whether the result would be equally satisfactory was another matter; and, as I had no opportunity to ascertain it in the case mentioned, I hesitated to employ the method, being fairly well satisfied with my success in perineorrhaphy, until about a year later, when an article by Säger¹ again called my attention to it and induced me to give it a trial. A difficult case of complete laceration in a stout woman soon presented itself (Oct. 19th, 1887), and the operation was so perfectly successful that I have since employed it exclusively in every case of complete laceration and of uncomplicated incomplete laceration which has come under my observation. I find this number to be seventeen, of which eight were complete and nine incomplete lacerations. In sixteen cases a perfect cure was achieved, the function of the sphincter ani being perfectly restored in all the complete cases. In one case (my second operation, Dec. 28th, 1887) of the latter variety I regret to have met with a failure, and, what is worse, a failure of the most disastrous kind, for the patient died of septicemia. This should never have occurred, and, I trust, never will happen again, for it was due to an unfortunate complication of circumstances. The patient was excessively nervous and violently resisted the anesthetic. I divided the recto-vaginal septum rather deeply, in order to insure a sufficiently large wound, the edges of which I thought I had carefully approximated with deep wire sutures, copious irrigation with a 1:5,000 sublimate solution being carried on during the whole operation. On the day after the operation the patient had a slight elevation of temperature and was very restless. This was attributed to her nervous condition and to reaction from the struggle of the operation. On the next day I was taken sick with a severe attack of tonsillitis and was un-

¹ Volkmann's Samml. Klin. Vortr., 301, 1887.

able to leave the house for four days, during which time I sent to the hospital to inquire after the patient. The report was that she was doing well, although she had some slight elevation of temperature. As soon as I was able to go out—that is, six days after the operation—I visited the hospital and at once recognized that the patient was intensely septic. I immediately removed all the sutures, found a large, gaping, sloughing cavity, and irrigated it thoroughly with sublimate solution. This was continued most faithfully, but the woman was too much infected and died on the twelfth day.

The house surgeon was too conscientious to interfere with the sutures, not wishing to prevent the expected primary union. He should have removed the sutures as soon as signs of septice-mia appeared. But I do not blame him, as he expected no more than I that septic infection would occur after a simple perineorrhaphy. I fear that, in this case, I made too deep an incision, and that some of the sutures tore out in the brittle tissue and left a sloughing, septic cavity. I wish to warn against making the incisions too deep, for fear of such an accident. It is the first and only case in my experience where a patient has had septic infection after perineorrhaphy, no matter what method was employed.

The *modus operandi* as at present practised by me is the following:

The patient has been prepared by having her bowels thoroughly moved by laxatives (comp. licorice powder or the sulphur, sulphate of magnesia, and bitartrate of potash, equal parts, mixture, one tablespoonful in a glass of water on the second but one and on the morning of the day preceding the operation), no laxative being given the evening *before* the operation for fear of diarrhea during the operation; and an enema of warm water is administered during the forenoon of the day of operation. The diet has been fluid for at least two days before the operation. The labia are shaved. The patient is placed in the lithotomy position, the legs are evenly held by an assistant or nurse on each side, and the labia carefully and evenly separated by the fingers of each assistant.

For Incomplete Laceration.—The centre of the cicatrix in the recto-vaginal septum is seized and put on a stretch by a tenaculum, held by the left hand of the operator, who inserts a sharp-pointed straight scissors immediately below the tenacu-

lum and rapidly cuts to right and to left until he has made a transverse wound about one-quarter of an inch in depth; he then has the upper flap held up by a tenaculum, and the lower drawn down by a tenaculum, each being held by an assistant. The operator then with one clip of the scissors makes an incision, first on one side of the labia and then on the other, up to the point where he wishes the posterior commissure to be, usually at a spot corresponding to the scar which marks the beginning of the laceration of the perineum. (See *a, b, c, d*, Fig. 1.) The depth of the incision should seldom be more than one-quarter of an inch—that is, about down to the muscle. To split the recto-vaginal septum deeper is to run the risk of the

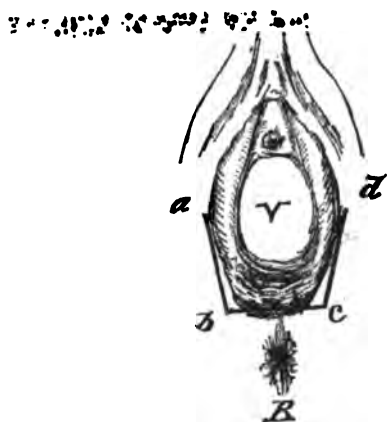


FIG. 1.
Flap-Splitting Operation for
Incomplete Laceration.

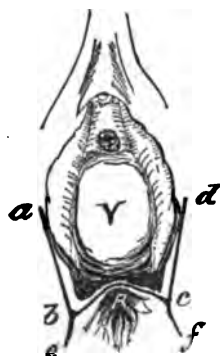


FIG. 2.
Flap-Splitting Operation for
Complete Laceration.

sutures cutting through or tearing out of the friable interseptal areolar tissue, and the formation of a pocket for the retention of pus or septic discharge. When the flaps of the septum are sharply drawn apart by tenacula, such bands as still need to be divided, in order to give a smooth and sufficiently large wound, are readily seen and cut. Bleeding arteries are tied with fine catgut; hemorrhage of any amount does not occur. With the four sides of the wound well separated—the upper and lower flaps by tenacula, the lateral edges by the fingers of the other hand of each assistant—the operator passes his left index finger into the rectum, and, beginning at the lower portion of the wound, thrusts a stout, slightly curved Peaslee



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FLAP-SPLITTING OPERATION
FOR COMPLETE PERINEAL LACERATION - MUNDÉ.

needle into the skin about one-eighth of an inch from the left border of the wound, carries it rapidly but carefully, so as not to emerge on the surface of the wound, across the recto-vaginal septum, and pierces the skin at a corresponding point of the opposite side. A stout strand of silkworm gut, properly aseptized, is then passed through the eye of the needle and both are withdrawn. The ends of the suture are secured by artery forceps to prevent their being accidentally withdrawn. Suture after suture is then introduced, seldom more than three or four being needed. The wound has been kept under a stream of 1:5,000 sublimate solution, which is continued until the last suture is knotted. The sutures are tied in the same order as inserted, from the sphincter ani upward toward the vagina. The edges of the skin are coaptated as thoroughly as possible, but usually a few superficial catgut sutures are required, and this is especially the case with the margin of the vaginal mucous membrane and the posterior commissure, which usually need stitching together with catgut.

For Complete Laceration.—The principle of this operation is the same as that just described, the only addition being two lateral incisions downward from the angles formed by the junction of the transverse slit and the lateral upward slits. (See *e, b, c, f*, Fig. 2). These two lateral slits extend down to and just outside the easily recognizable borders of the torn and separated sphincter ani. The line for the transverse slit is very distinctly marked by the fine cicatrix separating the vaginal and rectal mucous membranes. When the flaps are separated by tenacula and fingers, as above described for incomplete laceration, the gaping anal orifice and bright-red rectal mucosa are hidden, and the lower border of the wound, instead of being convex, as seen in Fig. 2 and in the plate, becomes a straight transverse line, just as in the operation for incomplete laceration. The sutures are inserted in precisely the same manner, care being taken, however, to let the two first sutures include the ends of the sphincter ani without fail. It is wonderful how neatly, accurately, and rapidly this large quadrilateral wound can be closed and changed to a linear median slit by simply tying the transverse sutures. From four to six silkworm gut stitches are usually required for a complete laceration, according to the normal length of the perineum in each case.

The time usually occupied for the whole operation should

not exceed fifteen minutes ; in one case of complete laceration, according to one of my spectators, I required but eleven minutes. In another case, however, of a very stout lady, who had been twice operated upon unsuccessfully by other methods and other operators, there were so many spurting arteries which required ligation, and the introduction of the sutures through the thick fat and old cicatricial tissue was so difficult, that nearly forty minutes were consumed before the last catgut stitch was inserted. She made an excellent recovery, with perfect retention.

I have made several slight changes in the technique of the operation since I first performed it :

1. *Point of Insertion of Sutures.*—Tait directs them to be entered just within the margin of the skin, so as to avoid the pain caused by their pressure on the cutaneous nerves. I did so the first and second times, but found that the brittle tissue was so liable to tear that perfect coaptation of the skin borders was impossible, and numerous, even deep, catgut sutures were needed to secure a fairly smooth line of union. Since then I have inserted them just within the skin, and have found the pain slight and the union excellent.

2. *Material of Sutures.*—Following Säger, I first used silver wire ; but I soon returned to the silkworm gut used by Tait in very thick perineal and incomplete lacerations, sometimes putting two strands together for greater security against breaking and cutting.

The after-treatment is very simple. The patient passes her urine, if able ; if not, it is carefully drawn by sight, the vestibule being first cleansed with cotton dipped in a weak sublimate solution. If micturition is voluntary, the vulva is syringed off with a weak sublimate solution, and twice daily a two-per-cent carbolyzed, warm vaginal douche is carefully given.

The diet is light and fluid, and the bowels are moved by compound licorice powder, or the sulphur mixture already described, or by repeated drachm doses of sulphate of magnesia in hot water on the third day, and certainly every other day thereafter. This applies to the complete as well as incomplete cases. Enemas are used only if the feces are hard, and then very carefully by an experienced nurse. Proper attention to the bowels and light diet for several days before the operation should prevent any trouble with this most important function

after the operation. The stitches are removed between the seventh and tenth days, or sooner if found to be cutting or irritating.

A thin layer of iodoform gauze is kept over the vulva, and changed as often as soiled, from the operation until the wound is healed. The patient is allowed to sit up on about the fourteenth day, and can usually be discharged by the end of the third week.

The advantages of this method of perineorrhaphy unquestionably are: 1, Celerity; 2, Simplicity; 3, Success, which latter advantage applies most forcibly to cases of complete laceration, where the old methods so often fail; 4, Preservation of tissue, none whatever being removed, and hence, in case of failure, the condition is no worse than before.

The principle being simply that of splitting the recto-vaginal septum transversely without removing any tissue, and then bringing the lateral borders of the wound together in the median line without puncturing either the vaginal or the rectal mucous membrane with sutures, the formation of that troublesome cause of failure after the old methods—a recto-vaginal fistula—is much less likely to occur; and sphincter ani and posterior commissure once firmly healed, any slight superficial defect readily closes by granulation.

A. Martin,¹ who has recently written a short paper on his experience with this operation, uses the continuous suture of juniper prepared catgut, applying it in layers from the bottom of the wound upward.

This operation is only applicable to *uncomplicated* lacerations of the perineum. It *might* be performed after the vagina has been narrowed by one of the numerous methods; but in all cases of rectocele with lacerated perineum I prefer the, in my hands, almost always successful method of Hegar, the description of which can be found in my "Minor Surgical Gynecology," p. 532, 2d ed., 1885.

One word in conclusion about the name and origin of this operation. It has become popularly known as "Tait's operation for lacerated perineum," because undoubtedly he first revived and described it in recent years; but he himself attributes it to a countryman of his, Collis. According to Säger, Voss, of Stockholm, is the originator of it. Wilms,

¹ Berl. Klin. Wochenschr., No. 6, 1889.

of Berlin, described a similar method. Martin calls it the "flap-perineum operation," which does not sound euphonious, but certainly expresses its principle and is correct.

A YEAR'S RECORD OF SEVENTY-FIVE SUCCESSFUL CASES OF ABDOMINAL SECTION.

BY
B. CURTIS MILLER, M.D.,
Charleston, W. Va.

DURING the year ending September 30th, 1888, I made seventy-five abdominal sections, and I am very happy to be able to state that in this list I have no fatal cases to tabulate.¹ The cases can be classified as follows:

Salpingo-oöphorectomy.....	43
Ovariectomy.....	9
Pelvic abscess.....	8
Miscellaneous sections.....	16
Total.....	75

Deaths, none.

OÖPHORECTOMY.

CASE I.—Miss G. J., age 30 years. For five years this lady had complained of pain in region of ovaries. During the menstrual period, which included eight days, the pain was often intense in character. She had become so much debilitated that for some weeks previous to operation she was confined to her bed. Operation November 5th, 1887, assisted by Dr. F. S. Thomas. Both ovaries were bound by adhesions and contained large quantities of pus. Tubes were distended by dark, grumous fluid. Adhesions detached and ovaries removed.

CASE II.—Mrs. M. D., married ten years; age 39 years. Aborted two years after marriage, and states she was never well after this accident. Menses always lasted eight or nine days, and were so profuse that she was compelled to remain in bed for a week at least, after their cessation, to recuperate from the resulting exhaustion. Operation November 7th, 1887, assisted

¹ I desire to state that I made abdominal section in 18 cases, *previous* to the 75 reported, without a death. Since October 1st, 1888, I have operated upon 51 cases, losing none, making a total number of 144 *successful* cases of laparotomy.

by Drs. Thomas and Zerkle. Found both tubes occluded and adherent. Ovaries cystic.

CASE III.—Mrs. C. H., age 24 years; married four years. Contracted gonorrhea from husband shortly after marriage, which resulted in a violent attack of salpingitis, from the effects of which she had continued to suffer. Operation November 11th, 1887. Ovarian cysts filled with pus, closely adherent, and removed with great difficulty.

CASE IV.—Miss A. B., age 20 years. Menstruation commenced at fifteen years. At her third menstrual period caught a severe cold, since which time she has suffered pain in region of ovaries, and for past five years confined to her bed. Operation November 14th, 1887. Ovaries enlarged, closely adherent in the cul-de-sac, each by fibrous bands, and both together contained about two ounces of pus. This case will illustrate the prolific source of disease among women resulting from imprudence during menstruation.

CASE V.—Mrs. M. E. B., age 23 years; married at eighteen years. Passed through difficult labor one year after marriage. Had puerperal fever, and has been in poor health since. During her subsequent menstrual periods she would suffer from eight to ten days, have convulsions, and become perfectly unconscious for a part of that time. Operation November 15th, 1887, assisted by Drs. Thomas and Staunton. Ovaries cystic, with a small amount of pus. Tubes occluded and distended by dark fluid. No adhesions.

CASE VI.—Mrs. Jane R., age 26 years; married three years. Never pregnant. Suffered pain in region of ovaries for five years, which has increased last two years. Has had lately symptoms of local peritonitis. Uterus retroverted and bound by adhesions. Operation November 18th, 1887. Ovaries enlarged and contained pus. Tubes occluded by serum.

CASE VII.—Mrs. E. H., age 34 years; married eleven years. Has had four children, the youngest of whom is three years old. During past two years she has suffered intensely from dysmenorrhea; general health greatly impaired, and the best part of her time spent in bed. Operation December 10th, 1887. Small fibroid on uterus. Ovaries and tubes fused together in cul-de-sac. Experienced considerable difficulty in the removal of left ovary and tube, due to the extensive suppuration present. Right ovary and tube contained blood and serum.

CASE VIII.—Mrs. R. V., age 23 years; married three years. During past two years suffered from pelvic pain and tenderness, which always became very severe during first day of menstrual flow. Operation December 16th, 1887. Double pyo-salpinx. Both tubes greatly distended ("cysts from retention"). Rupture occurred during the effort of removal, as they were closely adherent. Suppurative inflammation present in ovaries.

CASE IX.—Mrs. C. A. M., age 28 years. Married seven years; three children, youngest two years old. Trouble dates from last confinement. Suffered intense pain at every menstrual period since. Operation December 20th, 1887, assisted by Dr. Thomas. Left ovary and tube contained about two ounces of pus. Appendages bound by adhesions.

CASE X.—Mrs. C. B. C., age 32; three children. Has been an invalid since birth of last child, four years ago. Profuse leucorrhea; violent pain at each menstrual period. Operation January 7th, 1888, assisted by Drs. Chilton, Clarke, and Zerkle. Double pyo-salpinx. Tubes occluded, slightly distended, but firmly adherent. Ovaries contained small quantity of pus. Removal attended with considerable difficulty.

CASE XI.—Mrs. R. C. D., age 29 years; four children. Since birth of last child, seven years ago, has been unable to attend ordinary domestic duties. Menstrual periods attended with severe pains; quantity profuse, and lasting usually eight days. Operation January 10th, 1888, assisted by Dr. Thomas. Double pyo-salpinx with adhesions.

CASE XII.—Mrs. C., age 33 years. Mother of one child, now twelve years of age. This lady weighed two hundred pounds. General health seemed perfectly good. At her menstrual period suffered intense pain, which commenced several days before the flow, and continued during the entire period of several days, and often a week. Anodynes had been freely employed to secure rest. Ovaries removed February 17th, 1888. Rapid recovery, and no pain since the operation.

CASE XIII.—Mrs. S. F. G., age 28 years. Mother of four children, youngest nineteen months. Has always suffered at menstrual periods. Since birth of last child, general health has been very poor, and her suffering from pain in the region of the ovaries often very great. Operation March 21st, 1888, assisted by Drs. Henry and Burdette; Drs. Cotton and Appleton present. Both ovaries cystic. Small quantity of pus observed in right one.

CASE XIV.—Mrs. H. S. W., age 32. Mother of four children. Two weeks after last confinement (sixteen months previous to operation) was taken ill with what was diagnosed as inflammation of bowels. Has been an invalid for the past year, complaining of severe pain about the pelvis. Operation March 22d, 1888. Double pyo-salpinx. Ovaries and tubes closely adherent, and removed with difficulty.

CASE XV.—Miss M. B., age 31 years. Has been in poor health for ten years. Menstrual flow always profuse, accompanied with pain, which was most severe on the first day of period. Has had two attacks of pelvic peritonitis; last attack three weeks previous to operation. Operation April 21st, 1888.

Ovaries enlarged and cystic. Small amount of pus in left ovary. Corresponding tube enlarged. Left tube inflamed and adherent to its ovary.

CASE XVI.—Mrs. F. W. C., age 36. Mother of two children. Two years since birth of last child, from which time illness dates. Severe menstrual pain. Locomotion difficult. Functional disturbances of the nervous system very prominent. Bilateral laceration of the cervix uteri. Both ovaries tender to touch. Diffused pain and soreness over lower portion of abdomen. Operated on cervix April 14th, and on May 8th, 1888, removed both ovaries and tubes. Left ovary contained half ounce of serum. Right ovary filled with blood and serum. Patient made rapid recovery.

CASE XVII.—Mrs. B. L. McC., age 42. Mother of two children. Resident of Maryland. Had been unable to walk for several months. Suffered from very severe dysmenorrhea. Symptoms of nervous derangement very prominent. Physical examination showed the tubes to be greatly distended and very sensitive to touch. Operation May 9th, 1888. Tubes enlarged, both ends occluded, and filled with pus and blood.

CASE XVIII.—Mrs. Annie A., age 37 years. Three years after marriage commenced her severe suffering at each menstrual period. At time of examination complained of intense "dragging" pains on both sides of lower part of abdomen. During past year has become an invalid from effects of reflex vomiting. Operation July 2d, 1888. Both ovaries cystic and enlarged to three times their normal size.

CASE XIX.—Mrs. R. A. U., age 20 years. Married nine months. Always suffered from more or less dysmenorrhea and leucorrhea. Constant uneasiness over the ovarian regions. Operation July 3d, 1888. Ovaries cystic and considerably enlarged. Tubes in a catarrhal condition.

CASE XX.—Mrs. M. A. L., age 32 years. Always suffered more or less from dysmenorrhea. Mother of two children. Dates her illness from an abortion two years ago. Pain of a "dragging" character, nearly constant, over both ovaries. Uterus found to be immovably fixed in a retroverted position. Tubes enlarged and ovaries prolapsed. Operation July 3d, 1888, assisted by Dr. Thomas. Ovaries and tubes removed. Ovaries cystic, and tubes distended with serum and slightly adherent.

CASE XXI.—Mrs. J. A., age 32 years; married ten years. No children. Suffered for two years past with severe pain in left iliac fossa. Gives history of gonorrhea. Examination revealed presence of a hard, immovable tumor in region of left ovary, very tender to touch. Operation July 6th, 1888. Left ovary scirrhus, and tube greatly distended by pus and blood.

CASE XXII.—Mrs. Julia M., age 30 years; mother of three

children. Suffers from severe pains in both iliac regions. Nutrition badly impaired. Uterus displaced backwards and fixed. Operation July 7th, 1888. Both ovaries cystic, and tubes distended by serum.

CASE XXIII.—Mrs. C. E. W., age 27 years; mother of two children. Has been an invalid for two years. Great suffering from dysmenorrhea. Found both ovaries enlarged and very sensitive to touch. Operation July 10th, 1888.

CASE XXIV.—Mrs. L. S. C., age 32 years; married ten years. No children. General health before marriage was good, but soon after became a great sufferer from dysmenorrhea. Operation July 11th, 1888. Both ovaries cystic, and left tube filled with pus.

CASE XXV.—Miss A. O., age 23 years. Has been an invalid for several years. Severe dysmenorrhea, and intense pain in back. Operation September 4th, 1888. Both ovaries enlarged and cystic.

CASE XXVI.—Mrs. N. O. O., age 37; six children. Date illness from birth of last child. Severe pain in both iliac regions. Operation September 5th, 1888. Both tubes occluded and filled with serum. Ovaries cystic.

CASE XXVII.—Miss D. R. T., age 23. Menstrual period lasts ten days. Has never suffered any pain, but the flow is profuse, and the resulting exhaustion so great that she is obliged to remain in bed the greater part of every month. Operation September 6th, 1888. Found both ovaries greatly enlarged, very soft and spongy.

The following fifteen sections were made in cases of myofibromata of the uterus; oöphorectomy being performed upon *these* patients for the premature induction of the menopause, since *it* seemed to promise better results and greater relief than any other method of treatment, when the numerous complications and variety of disorders noticeable in many of them had been carefully considered.

CASE XXVIII.—Mrs. S. D. Operation September 16th, 1887.

“ XXIX.—Mrs. M. W.	“	“	21st,	“
“ XXX.—Mrs. L. V. F.	“	“	24th,	“
“ XXXI.—Mrs. C. J. T.	“	October	13th,	“
“ XXXII.—Mrs. S. H. L.	“	“	18th,	“
“ XXXIII.—Mrs. F. R. S.	“	December	3d,	“
“ XXXIV.—Mrs. J. E. W.	“	“	12th,	“
“ XXXV.—Mrs. J. T. R.	“	January	9th,	1888.
“ XXXVI.—Mrs. R. L. E.	“	February	22d,	“

CASE XXXVII.—Mrs. D. L. Operation March 16th, 1888.

“ XXXVIII.—Mrs. M. A. “ April 18th, “

“ XXXIX.—Mrs. H. S. W. “ May 2d, “

“ XL.—Mrs. M. A. “ May 18th, “

“ XLI.—Mrs. R. S. “ July 10th, “

“ XLII.—Mrs. E. B. B. “ July 11th, “

OVARIOTOMY.

Abdominal section was made in the following nine cases for the purpose of extirpating the diseased ovaries, or for the relief of troubles arising therefrom. The two cases of most interest are reported at length:

CASE XLIII.—Mrs. W. W. Operation November 3d, 1887.

CASE XLIV.—Mrs. E. N. *A case of multilocular ovarian cystoma.* On November 2d, 1887, Dr. Garrod brought this lady to my office, stating that she had an ovarian tumor of large size. Vaginal examination revealed the uterus rather mobile, and the lower surface of the tumor capable of being barely touched with the finger. The patient was very stout and muscular, and had suffered very little inconvenience from the presence of the tumor, except that of dyspnea, which slight exertion would produce. Operation November 4th, 1887, in which I was assisted by Drs. Garrod and Clarke. An incision, three inches in length, was made in the usual place. As soon as the tumor was reached, Tait's large trocar was plunged, as near as possible, into its centre, but no fluid escaped. Trocar removed, and the incision in the sac enlarged sufficiently to admit the hand. I was then able to break up and remove the contents of a large number of small cysts (fully fifty).

Sufficient room having now been gained, the hand was carried outside the sac to determine the points of adhesion. It was found to be more or less adherent to everything with which it came in contact, including the stomach and liver. Fortunately, many of the adhesions were easily broken, only a few causing delay and difficulty. The remainder of the tumor was finally brought out through the abdominal opening, and the pedicle, which was quite large, was transfixed and tied with the “Staffordshire” knot; the mass was then cut away. In the sac thus delivered were found quite a number of cysts remaining unbroken. The abdominal cavity was flushed with warm water, the wound closed, and a glass drainage tube inserted at the inferior angle. But little shock followed the operation, and the time occupied in its performance did not exceed thirty minutes. My annoyance and anxiety caused by the doubtful purity of the water which I was obliged to use in this case, and other inconveniences to which I had to submit, by no means consistent with

"antiseptic precautions," reminded me of a former occasion, when Dr. R. S. Henry and myself went into a far-off mountainous district to do an operation involving very serious responsibility, when we had to carry with us our own towels and soap, eatables, clean tin pans, etc., and spend half a day helping to scrub the room in which we wished to operate, and where our patient had to remain, for how long or *short* a time we dared not say. In this case of Mrs. E. N., I wished (until after she became convalescent) that I had even carried the *water* with me. The operation was obliged to be done at the patient's home in the mountains; and owing to the unusually dry weather which prevailed at the time, the only supply of water was from a little stream near by which had nearly exhausted itself. Some of the water was, no doubt, boiled, according to instructions given; but some, I know, was only *warmed*. However, the temperature reached its highest at 102°. Drainage tube removed on fourth day. I did not see the patient after operating, owing to the long distance from home. The after-treatment was successfully carried out by Dr. Garrod, the family physician, and he reports she has made an excellent recovery. The weight of the mass removed was nearly forty pounds.

CASE XLV.—Mrs. C. E. C. Operation December 10th, 1887.

" XLVI.—Mrs. B. H. " January 14th, 1888.

" XLVII.—Mrs. L. C. V. " March 16th, "

" XLVIII.—Mrs. J. L. L. " April 2d, "

" XLIX.—Mrs. C. M. F. " May 5th, "

CASE L.—Mrs. S. L. S. Intra-ligamentous cyst. This lady was sent to me by Dr. Franklin, of Chillicothe, Ohio. Her age was 32; mother of three children. Last confinement nineteen months prior to operation. Her health had always been good until within the last two years. Her illness commenced with a sense of uneasiness in the left inguinal region, gradually increasing to a pain; then a "lump" attracted her notice. After a careful examination and a summary of all the rational and physical signs, I was forced to the conclusion that I had to deal with an *ovarian cyst*, and so diagnosed it. Operation May 9th, 1888, assisted by Drs. Clarke and Miller, of St. Albans, W. Va. When the tumor was exposed to view, it was found closely adherent at its several points of contact. The bladder was adherent to its anterior portion, and dragged sufficiently upward to become attached to the peritoneum. My first effort was to carefully dissect away and free this viscus, which I finally succeeded in doing without injury to it, but not without unexpected and alarming hemorrhage, which required no little time to be controlled by the united means of hot sponge pressure and liq. ferri chloridi.

The outer and upper portion of the tumor was adherent to the liver and intestines, but in the separation of these and other

adhesions I experienced no difficulty when compared with those of the bladder. I then opened the sac and removed nearly a gallon of semi-solid substance. It was then revealed that the bottom of the sac contained growths of a papillomatous character, the removal of which caused complete collapse of the cyst. An effort to draw out the cyst was not successful until the traction was aided by the finger being passed downwards and under, and the firm adhesions to the pelvic tissues broken. The sac was finally separated from the left broad ligament. Many of the blood-vessels were large and the hemorrhage was extensive and annoying. There was no pedicle, and the tumor was entirely removed. The edges of the intra-ligamentous wound were attached to the border of the abdominal incision, and a glass drainage tube inserted. The wound was washed out twice a day with warm water, and a good recovery resulted.

CASE LI.—Mrs. V. A. W. Operation Sept. 29th, 1888.

PELVIC ABSCESS.

The following eight sections were made in cases of pelvic abscess:

CASE LII.—Mrs. C. L. Operation Sept. 28th, 1887.

CASE LIII.—Mrs. M. L. T. Operation Nov. 21st, 1887.

CASE LIV.—Miss F. A., 27 years of age. Had always been delicate. Strumous diathesis very marked. She was emaciated to a considerable degree. When she entered my private hospital (February 27th, 1888), her evening temperature was high, and she suffered from intense pain and tenderness about the pelvic region, and at times from great interference with urination. Simple inspection revealed at once the increased size of the lower abdomen, extending nearly as high as the umbilicus, making a marked contrast with her otherwise emaciated condition. Physical examination revealed the presence of a large, fluctuating tumor, the roof of the pelvis hard, and the uterus pressed to one side and immovably fixed. The abdominal surface was selected as the point of evacuation. A large cavity, containing nearly two quarts of fetid pus and decomposing blood-clots, was found, and its contents removed with the aid of a large suction pump.

The cavity was carefully cleaned and two drainage tubes placed, one in the pus cavity and the other in the abdominal wound. She passed through the operation much better than I had anticipated. At the end of a week both drainage tubes were removed. I then made an opening in the bottom of the sac through the vagina, and inserted a soft rubber tube, which remained in position three months. After its removal complete closure of the vaginal opening followed. I learn that the lady has married since and engaged in teaching.

Notes.—Since writing the above, I have been informed that this patient died recently, after a few days' illness from pneumonia.

CASE LV.—Mrs. G. H. S. Operation March 1st, 1888.

“ LVI.—Mrs. A. J. H. “ March 8th, “

“ LVII.—Mrs. J. N. R. “ May 19th, “

“ LVIII.—Mrs. A. M. “ July 2d, “

“ LIX.—Mrs. C. J. A. “ October 14th, 1887.

MISCELLANEOUS SECTIONS.

CASE LX.—Miss F. H. H. Papillomatous cyst of left broad ligament. Operation October 12th, 1887.

CASE LXI.—Mrs. E. C. Fatty tumor of the omentum. Operation October 16th, 1887.

CASE LXII.—Mrs. S. C. G. Fibroid of uterus. Operation November 9th, 1887.

CASE LXIII.—Miss M. A. E. Fibroid of uterus. Operation November 17th, 1887.

CASE LXIV.—Miss R. W. Papillomatous cyst of the right broad ligament. Operation December 4th, 1887.

CASE LXV.—Mrs. J. C. J. Fibroid of uterus. Operation December 4th, 1887.

CASE LXVI.—Mrs. S. A. W. Operation December 5th, 1887, for biliary calculi, in conjunction with Dr. R. S. Henry. (A detailed report of this case will be presented later.)

CASE LXVII.—H. F. S. Fibroid of the peritoneum. Operation December 19th, 1887.

CASE LXVIII.—Miss C. V. F. Papillomatous cyst of right broad ligament. Operation December 20th, 1887.

CASE LXIX.—Mrs. R. S. Fibroid of the peritoneum. Operation February 13th, 1888.

CASE LXX.—Mrs. W. T. Fibroid of uterus. Operation February 20th, 1888.

CASE LXXI.—Miss L. W. T. Laparotomy for acute peritonitis. Operation March 17th, 1888.

CASE LXXII.—Mrs. J. E. E. Fibroid of uterus. Operation April 3d, 1888.

CASE LXXIII.—Mrs. E. D. S. Hydatid of the liver. Operation April 9th, 1888.

CASE LXXIV.—Mrs. J. M. Laparotomy in connection with herniotomy. Operation July 1st, 1888.

CASE LXXV.—Mrs. W. W. S. Operation for gall stone, July 7th, 1888.

The closing of this report with the reference to the following subjects is not done because I have anything new to offer in regard to them, or that any particular set of rules rigidly observed in regard to the technique, dressings, etc., are "*the rules*" for all cases of abdominal section. In these cases I have been *blessed* with success. In some of them a successful result was not anticipated, as little, if any, choice and time were permitted, previous to the operation, for a tonic course of treatment, the promotion of cheerful surroundings, and the selection of the best locality and most favorable period for the operation. Besides, these patients were unable to avail themselves of the advantages of competent and experienced nurses. All of which we regard as important, and insist upon when at all practicable.

Every medical man, after he has acquired a little experience in surgery, especially abdominal surgery—without intentional disrespect and disregard of his teachings; without intended criticism of the manner and methods pursued by the eminent gentlemen whose operations he may have witnessed; without the assumption that *he* has discovered some manner or adopted some method superior to that practised by any other surgeon, and to which *his* good results in successful cases *must* be attributed—naturally drifts into a routine of procedure more or less his own, which he continues to practise from time to time, introducing such modifications and departures as the exigencies of a particular case may demand or the further development of his surgical branch may warrant. With these points in mind, I will briefly sketch, under the following heads, the general plan followed in making the sections above noted.

Anesthetics.—After repeated trials with ether and chloroform separately, and the use of several different forms of "inhalers," I now confine myself almost entirely to the use of a mixture of these two anesthetics, one-third chloroform and two-thirds ether, and administer the same by means of the "Clover" Inhaler. After eighteen months' trial of the "Clover" Inhaler, I have experienced more satisfaction than by any other method I have ever tried. The "Inhaler," which I brought with me from London, is easily cleaned, portable, and perfectly accurate in the amount and manner of dispensing.

The mixture is made just before administration. The advan-

tages presented, in my experience, by causing anesthesia in this way are:

1st. Patients are anesthetized more quickly and recover from the influence of it sooner; rarely any vomiting interrupts the operation.

2d. The patient requires a less quantity to preserve the anesthesia during the operation.

3d. The surgeon and his assistants are not inhaling the anesthetic agents. The quantity of the mixture used has rarely exceeded one and a half ounces. The economy, while not a great desideratum, is still worthy of consideration.

Making the Incision, Closing, Dressing, etc.—The incision is made with a small, sharp scalpel, and intended to pass directly through the linea alba, although it is often not detected when the abdomen is undistended. After the incision has exposed the sheath of the recti muscles, the scalpel is aided only by a pair of small forceps, with which the remaining tissues are pinched up and incised. The finger is the guide upon which the peritoneum is cut the length of the wound. I always make it a rule to work through as *short* an incision as possible, only enlarging it when it is evident that such will facilitate the removal of the growths, or when the connection of adhesions can be more accurately ascertained and dealt with with greater safety. In many of the cases of oöphorectomy the incision did not exceed an inch and a half in length. I endeavor to operate as quickly as possible; have everything in the line of instruments, etc., that might be needed ready and close by me, although in the majority of cases the scalpel, the small "pick-up" forceps, and the fingers do all the work.

The closure of the abdominal incision is made with *one set of fine silk sutures placed close together*. The sutures are all placed in position before any are secured. Additional sutures are used, if found necessary, when the edges of the wound are approximated by grasping the opposite ends of the suture in each hand, the object being to use a sufficient number of sutures to bring the edges together *closely, smoothly, and securely* all along the line of incision.

In one case only did I have a little suppuration in one of the suture tracks. I have discarded the use of iodoform, with which I formerly dusted the incised tract, and now use only a small piece of absorbent cotton (not larger than my hand) over

the wound, holding it in place by a couple of adhesive-plaster strips. A light muslin abdominal bandage is applied, the lower edges of which are prevented from rolling up by a "pinch-garter" strap attached to the stockings. I make no hurry to remove the sutures, and therefore have no fixed rule as to the time. I am guided by the rapidity of the union, and satisfy myself of the strength of it, often removing a few at a time. During the past two years I have changed entirely a former plan in regard to two points in the after-treatment, viz., opening the bowels and the administration of food. Formerly I kept the bowels at rest for a week at least, and in some cases I encountered difficulty in securing a movement at all, the very knowledge of which difficulty caused the patients anxiety and produced sufficient excitement to prevent rest. Besides, it is reasonable to infer that persons who have been accustomed to one or two daily evacuations from the bowels should experience a sense of restlessness and uneasiness, if no greater disturbance, when this habit is suddenly interrupted for a week; to which may be added the disturbing influences of anodynes upon the nervous system as well as the bowels, which I once thought should be occasionally administered.

Now it is my practice to administer on the second, or third day at least, teaspoonful doses of epsom or rochelle salts every three or four hours, until a thorough evacuation has resulted; and continue the same, if necessary, every three days, until the tenth day has passed. This procedure has given me very great satisfaction. Instead of withholding food for two days after operating, as I once did, I allow the patient, on the next morning, to eat freely of plain chicken broth; adding rice thoroughly boiled in the same the second day; following on succeeding days with small quantities of toast, beef tea, oatmeal gruel, eggs, chicken, and beefsteak. I have expunged milk from the list of articles of diet allowed during the after-treatment.

Antisepsis.—While I fully appreciate the value of antiseptic agents in surgery, there is no special form to which I strictly adhere. My object is *always* to secure *thorough cleanliness* and *not neglect details*. In *all* cases instruments are placed in boiling water before operating; hands of the operator and assistants carefully cleaned; listerine and carbolic acid sometimes used; body of the patient well washed; clean clothing

linen, bedding, etc., and *clean room* for operating always required.

Plenty of fresh water, as hot as can be handled, is freely employed during the operations. In a word, asepsis, as well as we know how to practise it, is the aim in all operations done.

THE VAGINA AS A HERNIAL CANAL.¹

BY

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(With three illustrations.)

THE fleshy diaphragm called the pelvic floor has a peculiar function. It must close up and completely seal the lower end of the body-cavity, resisting strong and frequent pressure ; it must open up and leave completely free the lower end of the cavity, must make away with itself when occasion demands, and yet resume its other function with unimpaired integrity. To the study of this interesting mechanism a brief contribution is here offered.

Dr. D. Berry Hart has ably and clearly brought forward certain views concerning the division of the pelvic floor into two segments, known as the pubic and the sacral :

"The *pubic segment* is made up of loose tissue, viz., bladder, urethra, anterior vaginal wall, triangle of retro-pubic fat, and bladder peritoneum. It is attached in front to the symphysis pubis.

"The *sacral segment* is attached to the coccyx and sacrum ; it consists of rectum, perineum, and strong tendinous and muscular tissue [making up the so-called perineal and ano-coccygeal bodies]. The inferior portion of this segment, the perineum, lies about one and a half inches from the symphysis. The attachment of this segment is very strong.

"During labor the pubic and sacral segments, as seen in a

¹Part of the Prize Essay, for 1887, of the Association of the Alumni of Long Island College Hospital.

sagittal mesial section, may be likened to two folding doors. Uterine action pulls up the pubic segment, and drives the child down against the sacral one. This action is analogous to the way one passes through two folding doors, when he pulls the one door toward him and pushes the other from him" ("Manual").

Objections to Hart's Views.—Dr. Frank P. Foster pointed out that "the author has lost sight of one important fact in connection with the pubic segment, viz., that the sacro-uterine ligaments are a practical extension of this segment to the posterior bony wall of the pelvis, thus transforming it into a sup-

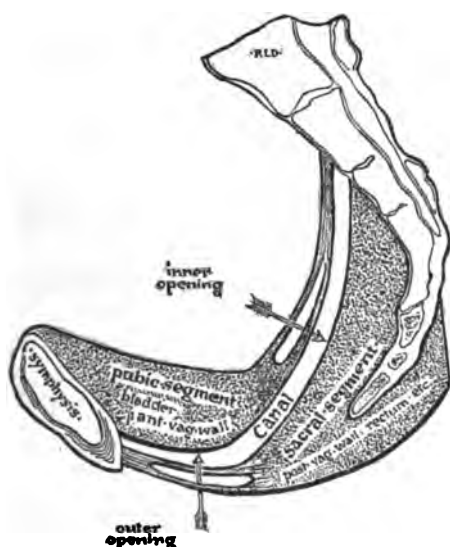


FIG. 1.—The segments and their attachments, showing the resemblance to the inguinal canal herein, that the extruded body passes through an opening in the thin portion of each layer, which opening is fortified by the thick part of the other layer. ($\frac{1}{2}$)

porting medium for the uterus." The anterior vaginal wall, attached in front to the uterus, and the ligaments behind the uterus, constitute its main support, according to his view (AMER. JOUR. OBSTET., January, 1880).

Another objection is urged by Ranney (N. Y. *Med. Jour.*, July, 1882), "namely, that the sacral segment is continued as far forward as the symphysis pubis in all antero-posterior sections of the pelvis, except those in the median line; here the opening of the external genitals exists, and it apparently makes its ter-

mination at the posterior commissure of the vulva. This anatomical fact is not made apparent in Hart's drawings of this segment, and must, to my mind, destroy all similarity of this segment to a hinged flap."

To me it seems that *the pelvic floor has been constructed exactly on the principle of the inguinal canal*. On examination of that canal we find two layers with an opening in each for the exit of the cord. The rings are not one over the other, but at such a distance one from the other that, when pressure from within is exerted, the opening in the inner layer is firmly crowded against a flat surface of the outer layer, while a part of the inner layer covers the outer opening. So here. The

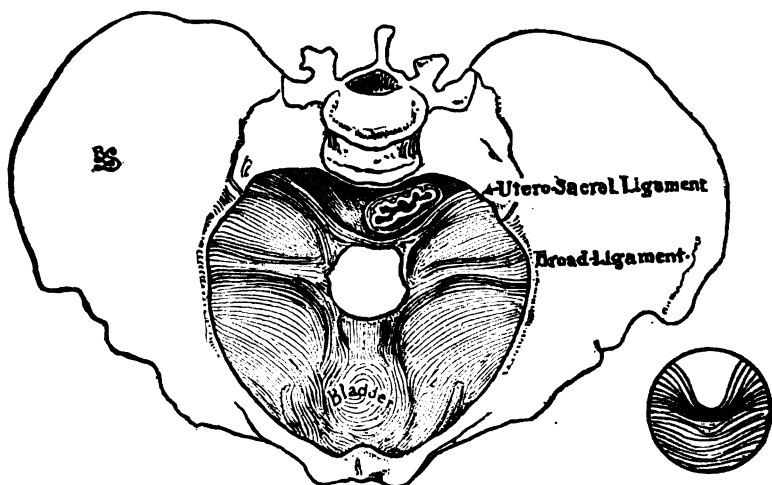


FIG. 2.—The upper layer, seen from above. The opening is far back. The fan-shaped trend of the fibre is shown diagrammatically.

thick pubic segment has a thin circle of attachment to the sacrum through which a cleft may be said to open between the utero-sacral ligaments. This is the inner aperture. From it a canal (the vagina) runs *obliquely* downward to the flaw in the outer layer. This outer layer is the thick sacral segment with a thin circle of attachment to the pubes—mainly, the levator ani and the fascia. The outer opening is the vaginal orifice.

Intra-abdominal pressure will act on the "closed" pelvic floor just as it does on the inguinal canal, crowding the weak part of each layer against the thickened strength of its fellow. This

explanation seems more reasonable than Hart's folding doors swinging free beyond a slight lap.

The *points of resemblance* between the inguinal and vaginal canals may be epitomized as follows :

1. Both are openings into the lower end of the abdominal cavity.
2. Both run out from the cavity nearly or quite at right angles to the abdominal pressure.
3. Each has two main layers, with a ring in each layer.
4. When the body which is protruded through either is small, be it gut or uterus, the hernia is oblique ; when the body protruded is large (and gradually distends the passage), the two rings lie one over the other, and the opening seems single.



FIG. 3.—The under layer, seen from above. The opening is far forward. The fan-shape of the fibre is directly opposite in direction to that of the last figure.

The *points of difference* are :

1. No cord escapes through the vaginal hernial canal.
2. The inner ring of this canal is closed in part by the uterus, set into it like a cork, and is in part roofed by the bottom of the pouch of Douglas.
3. One is built of tissue which is firm and unsuited to yielding under strain ; the other is constructed with especial reference to elasticity and distention.

The two layers are made up in the following way :

1. The upper layer :

a, thick portion : Retro-pubic fat.
Bladder and urethra.

- Parametric tissue of Virchow inclosing the cervix, together with the cellular tissue at the bases of the broad ligaments.
- Anterior vaginal wall.
- Peritoneum.
- b*, thin portion : Broad ligaments.
- Utero-sacral ligaments.
- Peritoneum.
- 2. The under layer :
 - a*, thick portion : Coccyx.
 - Rectum.
 - Ano-coccygeal body.
 - Perineal body.
 - Posterior vaginal wall.
 - b*, thin portion : Levator ani muscle and fascia.
 - Lesser muscles, fascia, and skin.

In the diagrams, Figs. 2 and 3, we observe that the "fibre," or general structural trend, of these two layers runs in very different directions, the fibres of the upper layer radiating from a point in front, the lower from a point behind. If we put the two together, the structure resulting would seem to be one well qualified for bearing strain, yet admirably adapted to open up in the truly remarkable manner by which delivery is accomplished—namely, by pulling up the upper layer with the cervix, to which it is firmly attached, and by driving down the under layer in a distorted funnel shape.

Hernia—that is, prolapse of the uterus and vagina—will occur under these conditions :

1. When the increase of pressure or of weight from above is so great that it bears down before it supports which are normal in strength, and which are made up of the two layers.

2. When the rings have begun to lap one over the other. This happens when injury to the upper layer—most commonly to the utero-sacral and broad ligaments—allows the upper opening to slip forward toward the lower one, and when laceration of the perineum enlarges the lower ring backward so that it approaches the upper ring. Injury to the levator also drops the lower ring backward, as in cases of prolapsus in which the perineal body is untorn, whereas a strong levator holds the

lower segment steadily against the upper ring, drawing the anus forward toward the symphysis, and preventing prolapse, even where severe perineal laceration is present.

INTRA-UTERINE THERAPEUTICS.

BY

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(Concluded from page 690.)

CONSIDERATION of both the favorable and unfavorable cases leads to the following conclusions :

I. Intra-uterine cauterizations, like all other topical irritating medications, always determine a dilatation of blood-vessels at a distance from the point of application. This corresponds to the zone of peri-inflammatory hyperemia which surrounds every focus of inflammation.

II. In this distant vascular effect lie at once a principal power for good and also the essential danger of the method. While topical medication of the cervical canal limits its influence to the surface to which a drug is applied, intra-uterine medication profoundly modifies the circulation and innervation of the submucous and even periuterine tissues. In doing so, it becomes dangerous, precisely in the proportion to the degree of periuterine hyperemia which may have pre-existed.

III. Nearly all the cases of accident depend upon this circumstance. Proximity to a menstrual period, presence of chronic peritonitis, ovaritis, or salpingitis, or even an intense degree of engorgement of the periuterine reservoirs and ovarian bulb, without inflammatory exudation, all tend to render intra-uterine medication dangerous, because tending to render periuterine hyperemia excessive.

IV. Among all conditions of danger, none is so important as the proximity of a menstrual period.

On several occasions, the post-menstrual applications have been made upon patients with enlarged ovaries, or even with

symptoms of chronic peritonitis, and no more untoward result has been observed than an increase of dysmenorrhea at the next menstruation. Several patients—and three out of the seven whose histories have been detailed—were treated several times with marked benefit so long as the treatment was confined to the post-menstrual week, yet suffered more or less severe accidents when precisely the same applications were made later than fourteen days from the close of menstruation.

It does not seem to me that the paramount importance of this fact has hitherto been adequately recognized. It is not, indeed, so many years ago that many modes of intra-uterine medication, even including the use of sponge tents, were distinctly advised in preference for the premenstrual week, and I have collected a number of even contemporary recommendations to the same effect. In the light of our present knowledge, such advice must be considered as simply crazy.¹

The remarkable difference in toleration to intra-uterine medication existing at different periods of the menstrual cycle is in itself an important indication of the gradual development of the periuterine reservoirs during the intermenstrual period. For eight or ten days after the cessation of the menstrual hemorrhage, the utero-ovarian system is quiescent, the pelvic circulation and innervation at their minimum of excitability. This is the golden moment which, and almost alone, can be seized for the intra-uterine treatment of sufferers from pelvic disease.

V. The periuterine veins differ from all others in the body in assuming, at the close of the quiescent period, an active growth, in virtue of which blood is aspired to them in anticipation of the needs of reproductive nutrition. During this period their condition somewhat resembles that of the vessels surrounding a focus of inflammation, which dilate actively, and even grow in response to the central stimulus of the focus. Irritation of the focus, overwhelmingly increasing the stimulus, is liable in the one case as the other to disastrously aggravate the peripheric hyperemia, even to the point of determining exudation from over-engorged blood-vessels.

VI. The period of danger varies, but in all doubtful cases

¹ "The physician may safely pass the sound, or apply intra-uterine medication, so long as the menstrual period is not actually imminent" ("wenn die neue Periode noch nicht dicht vor der Thüre steht"). Ahlfeld, *Deutsche med. Wochenschr.*, 1880, p. 451.

may be assumed to begin ten days after the close of a menstruation, although unquestionably in many cases intra-uterine applications are made with impunity much later.

VII. Another important fact made evident by analysis of the cases is the influence of the repetition of treatment within one menstrual cycle. When we read of patients who receive three, five, and six intra-uterine applications every month, and for several months, we may well ask, to explain such tolerance, whether the medicine has ever penetrated within the internal os. It has happened over and over again, in the management of the cases here referred to, to find one post-menstrual application perfectly well tolerated, but, if repeated in a week, to cause much pain and be followed by a painful menstruation. The only case of death on the list followed upon such a reduplication of the treatment, which, confined to the post-menstrual week, had been perfectly tolerated and had done good.

The explanation is the same as for the other cases. After a single intra-uterine application, the periuterine vessels are somewhat dilated or their periodical growth is stimulated. Within certain limits this is beneficial, for venous stasis tends to be thereby dissipated. But if to this be added the further stimulus of a second application, the effect easily becomes excessive. The rule must be, therefore, never to make two applications in one month until tolerance of one has been well proved or established, and usually on the first trial to make it of a milder character. Only very rarely, and when disease is entirely limited to the uterus itself (which is rarely the case), can three applications be made.

VIII. It is, however, sometimes useful to follow a single intra-uterine application by weekly, or even semi-weekly, medication of the cervical canal.

IX. For the same reason that two applications in one month are often too irritating, the continuance of treatment through too many successive months will often do more harm than good. After three months it is nearly always advisable to suspend intra-uterine medication for one, two, or three months. Other forms of treatment can then with profit be continued.

X. If an intra-uterine application be followed by an unusual intensity or duration of pain a day or two later, it is very common to find some degree of swelling in the lateral or posterior cul-de-sac; sometimes this only indicates swelling of the

vascular connective tissue and the periuterine plexus. But sometimes, especially when there have been severe cramps, it seems to imply that fluids have been squeezed out of the Fallopian tubes into the cul-de-sac of Douglas, there exciting a circumscribed peritonitis. This may develop without fever and exist without much conscious aggravation of the patient's condition. Local applications of iodine or the constant galvanic current will dissipate these small swellings rapidly; but they necessitate interruption of intra-uterine treatment for at least three months, sometimes much longer. The benefit derived from the medication is by no means lost; when the transient irritation has subsided, the patient may perfectly recover. The case may be compared with the surgical operations which fail to heal by first intention, but which, after some troublesome suppuration and without dangerous accident, at last recover completely.

XI. After the time and number of the applications, the place at which they are made is of great importance. In certain cases of indolent chronic metritis of multiparæ they may be made safely in the physician's office; but in the great majority of cases it is as unsafe to do this as it would now be recognized to be to so introduce a sponge tent. They must be made at home, the patient in bed, and remaining there from six hours to six days, according to the severity of the reaction.

Intra-uterine medication must indeed be regarded as a surgical operation; minor, usually, as regards facility of execution, but always liable, unless all precautions are taken, of rising to the dignity or notoriety of a very serious affair.

XII. A fourth consideration is that of dilatation. In the majority of the foregoing cases, the application was preceded by the use of the steel dilators. Sometimes, however, these were found to cause much more pain at the time, and to be followed by more pain through the month, than when the application was made by means of a Braun syringe with cotton-wrapped nozzle and without previous dilatation. In these cases, the canal, though not abnormally dilated, was easily pervious.

There are two classes of cases where it is better to use laminaria tents than steel dilators, or the immediate application. The first class comprises cases of spasmodic dysmenorrhea without intermenstrual symptoms, and where there is great

sensitiveness just at the internal os. There is then often profuse catarrh. Here the endometritis seems to be principally localized at the region of the sphincter, and is analogous to those catarrhs of the bladder which are localized at the trigonum. A laminaria tent tends to overcome the irritability of the sphincter, while at the same time it removes, as hardly anything else can, mucus accumulated in the crypts of the lining membrane, stretches and unfolds this, permits topical applications to come in thorough contact with it, while its own pressure and imbibition tends to disengage the swollen tissues. The second class of cases comprises the chronic metritis, where the womb is large and heavy. The canal may be dilated, though often it is only normal in size; the endometritis is apparently slight in comparison with the parenchymatous lesion. These are the cases for tents, according to the indication long ago pointed out by Dr. Sims. It is often advisable not only to use one tent, but after twenty-four hours to insert, as may then be done, two or three. With thorough aseptic precautions, and with laminaria tents, the procedure should not be dangerous. When there is a profuse muco-purulent discharge from the internal endometrium, with the necessary accompaniment of largely dilated lymph spaces, and the frequent complication of latent salpingitis or parametritis, the testimony of all authorities seems to be that even aseptic tents are at least liable to be dangerous, and intra-uterine application without dilatation even more so. It is for these cases that the method advocated by Goodell and Polk—complete and forcible dilatation of the uterus under ether, followed by curetting, antiseptic and stimulating applications, and drainage by means of a tube—is pre-eminently applicable. The list of cases analyzed in this paper does not, however, include any which precisely belong to this class.

XIII. The fifth, and certainly an important, consideration is that of the agent to be employed for intra-uterine cauterization.

The first point to be distinctly emphasized is that intra-uterine application must always be more or less profoundly caustic. Astringent remedies irritate, without securing any compensatory advantage. Four drugs have long dominated intra-uterine therapeutics—iron, iodine, nitric acid, carbolic acid. Nitrate of silver, formerly so much used that injections of its solution

were fearlessly made twice a week, seems now to be justly abandoned by common consent. The sesquichloride of iron seems to be the favorite remedy in the hands of German physicians. Hildebrand long ago advised it as a specific in uterine catarrh,¹ and it is similarly advised by Fritsch. I have twice seen metritis excited by the cautious introduction of iron into the uterine cavity, and have so frequently found it fail, even in hemorrhagic fungous endometritis, that I have abandoned it altogether. It is supposed to powerfully excite the contractility of the uterine wall. But it is certain that this effect is as readily produced by other agents that do not share with iron the dangerous property of forming coagula, which may even penetrate a uterine gland. The effect often resembles that of injecting iron into a nevus or a goitre, where also accidents often occur.

Carbolic acid diluted with glycerin, equal parts, is the mildest application which can be used with effect to the internal endometrium. The anesthetic effect is a valuable addition to the cauterizing action; and the latter is slight when glycerin is used. It is well known that Playfair restricts intra-uterine medication exclusively to the use of carbolic acid, more often pure than diluted.

Similarly, Lombe Atthill claimed to treat all cases of endometritis by fuming nitric acid. It is difficult to imagine any circumstance calling for the use of so strong a preparation of so powerful an agent. Nitric acid diluted with equal parts of water will produce an eschar fully as thick as is desirable, and the application is then far more painful than the iodine or phenol applications; *i. e.*, the immediate pain is not greater, but the secondary pain is far more severe and prolonged. Hence it is evident that the peripheric hyperemia is much greater.

The nitric acid applications are suitable, if at all, to the cases where the uterus is large and flabby, rather indolent, with dilated canal, thickened endometrium, and profuse catarrh. When the uterus is closed, tense, and irritable, nitric acid can only do harm.

Iodine, and the modern substitute introduced by Dr. Battey, iodized phenol, is much more complete in its effects than the foregoing drugs. There is an immediately topical effect, and

¹ Volkmann's *Klinische Sammlung*.

another may be anticipated from absorption of the iodine into the tissues, and through them into the general circulation. I tested this absorption by the following experiment: On a patient whose bladder had just been emptied, I made an intra-uterine application of iodized phenol, by means of the Braun syringe with cotton-wrapped nozzle. Three hours later, urine was passed and tested for iodine by the addition of boiled starch solution, a few drops of dilute sulphuric and of muriatic acid, and a drop of bisulphide of carbon. The entire test tube turned deep violet from the liberation of the iodine.

The tincture of iodine and the iodized phenol both coagulate the albuminous fluids on the surface of the mucosa, and in so doing cauterize this surface and form an eschar. Thus, as with other caustics, some diseased tissue is destroyed; the blood-vessels adjoining the eschar are dilated by active irritation, and the circulation in them quickened.

The more characteristic effect of iodine compounds depends upon the facility with which the iodine contained in them is set free, and from this point of view the action of iodoform should be identical with that of iodine tincture. According to Binz¹ and Högyes,² iodoform is dissolved in the fats which may be present at the point of application, and thus enter the circulation. In the capillaries, the iodine is readily given off from its soluble compound to the albuminous protoplasm of the cells surrounding the vessels (Binz), or forms a loose combination with the circulating albumin of the blood, or the tissues (Högyes). Or else the iodine before absorption, having the strongest tendency to form this same loose combination with albumin wherever found,³ may unite with the albumin of the secretions. In this case may be usefully exerted the "starving" influence on the morbidly developed tissues of uterine catarrh and granulating ulcerations, by which Högyes explains the phenomena of iodine cachexia. According to this writer, the iodine does not attack the fixed albumin of healthy tissues, nor destroy them, as has been often asserted, by replacing it in the albuminous molecule.⁴ But in combining by loose association or

¹ Virch. Archiv., 1874. Also Archiv. für exp. Pharm., Bd. VIII.

² Arch. f. Pharm., Bd. X., 1879.

³ Boehm, Arch. Pharm., Bd. V., 1876.

⁴ This wide-spread hypothesis seems to have been disproved by Boehm, loc. cit.

apposition with the entire molecule of the circulating albumin, it prevents this from being appropriated by the elements of the tissues, and the latter are to that extent impaired in their nutrition.

The pure, characteristic effect of iodine should, therefore, be much more distinctly obtained from iodoform than from tincture of iodine or iodized phenol. Iodoform contains ninety-six per cent of iodine, yet is not caustic, only directly denutritive and antiseptic. The other iodine preparations are caustic, *i. e.*, coagulate secretions, and destroy the superficial layers of tissue, and in the immediate and remote vicinity of the point of application are irritating, *i. e.*, cause an active dilatation of blood-vessels with its consequences. The indications for choice between the two remedies may therefore thus be formulated: When it is desired to obtain the remote effect on the parenchymatous circulation of the uterus which results from cauterization of the endometrium, iodine tincture or iodized phenol is required.

When a superficial action is required on abraded hyperemic surfaces, or on ulcers with papillary granulations, iodoform is preferable.

It follows that iodine preparations are more often indicated for the uterine cavity and after dilatation, and with infrequent application; iodoform for cervical catarrhs and ulceration of the portio vaginalis. The absence of irritation, which is usually observed after its employment, enables it to be repeated at short intervals.

The following cases show a remarkably prompt action of iodoform:

Married; æt. 35; sterile. Intense generalized endometritis of many years' duration. Two years previous to present treatment, much perinterine tenderness and swelling, indications of tubal disease. At time of treatment, these periuterine symptoms had subsided, but there were profuse, tenacious discharge and great tenderness of endometrium, which bled on touch.

First treatment, Feb. 2d. Dilatation of cervix with laminaria tents; curetting cavity; application iodized phenol; glass plug left in cervix for two days.

Second treatment, Feb. 12th. Iodized phenol on probe to cervical canal.

Third treatment, Feb. 16th. Ibid. Effect: On 19th find plug of cervical discharge a little thinner; somewhat less sensitiveness at internal os; repeat.

Fourth treatment. Ibid.

Fifth treatment. Iodoform pencil in cervical canal. Effect: Slight cramps on March 2d for first time; very great diminution of discharge; patient feeling very well.

Sixth treatment. Iodoform pencil inserted in canal; then a piece of absorbent cotton, soaked in solution of iodoform in almond oil, left in canal for an hour. Effect: Patient very well; next menstruation without pain.

CASE II.—Married woman; six children. Treated for some time unavailingly for a superficial ulceration of portio vaginalis, and cervical catarrh in a retroflexed uterus, after replacement of pessary. No uterine symptoms, but much vesical tenesmus, aggravated at each menstrual period. Limited catarrh at neck of bladder demonstrated by endoscope.

Feb. 26th. First treatment: Iodoform pencil to cervical canal. Solution of iodoform in almond oil applied to cervical ulceration. Effect: For first time, marked improvement in ulcer and in catarrh observed on March 2d

Second treatment on March 2d. Ibid. Applications repeated on March 5th.

Effect: On March 5th, ulcer almost healed. Menstruation expected in three days. Severe cramps in bladder. Iodoform pencil to urethra also. Effect: Immediate relief to bladder pain, which did not return through menstruation, nor by the 22d. At this time, ulceration so nearly healed that suggestion of operation on cervix, at one time made, was abandoned.

CASE III.—Married; 27; one child, 3 years. Retroflexion and severe catarrh, with usual local symptoms; much relieved when uterus replaced, first by tampons, then a pessary. After two months, intra-uterine application of iodized phenol with rapid dilatation. Repeated following month. Patient felt nearly well, but moderate redness and secretion from cervical mucosa persisted in March.

March 12th. First treatment. Iodoform pencil to cervical canal.

March 16th. Ibid.

March 20th. Ibid. Effect: On 23d, cervix found perfectly healthy.

CASE IV.—Married; æt. 25. Sterile. Patient treated in winter 1887-88 for retroflexion, generalized endometritis, ulceration of posterior lips, severe dysmenorrhea, and headaches. Effect: Relief to all symptoms for many months, though persistence, about unchanged, of ulceration. In fall of 1888, return of dysmenorrhea.

Feb. 4th. First intra-uterine application of iodized phenol. Effect: On Feb. 11th, the canal more contracted. Ulcer as before.

Feb. 11th. Repeat to cervical canal with Braun's syringe. Effect: In half an hour a good deal of pain.

On March 14th, large eschar eliminated. Abrasion. The same. Feb. 14th. Iodized phenol on probe.

Feb. 23d. Second intra-uterine application of iodized phenol. Effect: Pain through night. Abrasion, as before, on March 5th.

March 5th. Solution of iodoform in almond oil applied to ulceration on absorbent cotton. Effect: For first time find ulceration much paler, and as if beginning to heal.

March 8th. Ibid. Effect: Menstruation without any pain. On 22d, ulceration healing.

CASE V.—Girl of 19. Had complained for a year of persistent pains over abdomen, much intensified at menstruation; endometritis and considerable periuterine congestion; chloro-anemia and hysteria. Relief to many symptoms by appropriate treatment, without local applications other than hot sitz baths and anodyne suppositories at menstruation. Still persistence of abdominal pain, aggravation of hysteria. One intra-uterine iodized-phenol application after laminaria tent.

Result: At first much improvement, then return of pain. Tenderness at fundal endometrium.

Iodoform pencil pushed to fundus. Immediate relief to abdominal pain. Repeated three times, at four days' interval. Patient felt very well.

In two cases, in young girls, the iodoform pencils, though causing no pain at the time of application, caused a good deal of pain later, coming on in half an hour and lasting two or three hours. When the pencil is made with gelatin and melts slowly, it may become a source of mechanical irritation as a foreign body, although the iodoform has not yet come in contact with the mucosa. It is better to use pencils made of cacao butter, which melt almost immediately. They are, however, much more difficult to introduce.

Canterization by strong currents of electricity is a more radically new method of treating endometritis than has been suggested for many years.¹ With the positive electrode, the superficial layers of the endometrium may be changed into an eschar closely resembling that formed by chemical caustics. Yet the formation of this eschar is attended by a minimum of peripheric irritation, and on this account the electricity has a great advantage over all chemical caustics. Our knowledge of the intra-polar effects of the current traversing the uterus is confessedly meagre. But clinically it appears evident that—

¹ See Apostoli's essay on chronic metritis; also Betton Massey, "Electricity in Diseases of Women," Philadelphia, 1889; also Grandin, *AMERICAN JOURNAL OF OBSTETRICS*, 1887.

1st. The irritability of nerves is diminished by the prolonged passage through them of the constant current. This is in accord with laboratory experiments on exposed nerves.

2d. The excitability of muscular tissue is aroused, and principally by the faradic current. This is clearly demonstrated by the occurrence of uterine cramps.

3d. Hyperemia is lessened, possibly by means of the sedation of the cerebro-spinal filaments in the utero-ovarian nerves.

4th. Thus to the direct local effect on the endometrium are joined effects on the subjacent uterine parenchyma which are important in proportion to the degree of parenchymatous metritis which exists. In forty-seven cases related by Apostoli in the thesis of Carlet, where the patient is said to have received benefit from electrical treatment for a uterine fibroma, the description of the case would lead to the inference that the uterine enlargement, often very slight, was really due to a diffused metritis. The enlargement of the uterus in these forty-seven favorable cases diminished from one centimetre to a centimetre and a half, as measured in the cavity. I have used this method in the following cases unassociated with tumor:

First: Case of persistently recurrent granulations attended by severe hemorrhages during a period of eight years. Recurrence after removal by thorough curetting under ether. Cavity of uterus measured four inches. First electrical positive cauterization, followed by expulsion of thick large eschar, and after that there was no more hemorrhage. Treatment continued three times a week for two months, when patient was permanently cured. Cavity reduced to three inches.

Second case: Young woman with first stage endometritis causing severe dysmenorrhea, no intermenstrual symptoms. Single electro positive-cauterization, followed by complete relief for three months. Then return of dysmenorrhea, again dissipated by repetition of treatment.

Third case: Young woman previously treated for endometritis by intra-uterine iodine applications; recovery; then, after two years, some return of symptoms. Completely dissipated by single electro-positive application.

Fourth: Woman of 40, suffering for several years from a complex group of hysterical symptoms together with pelvic dis-

trous interfering with walking, the whole apparently associated with development of several small subperitoneal fibroids. The uterus was enlarged to a depth of three inches, and there was some endometritis, which seemed to be the immediate cause of the symptoms, especially the persistent nausea. Six electrical cauterizations were made at rather varying intervals during a period of two months, and all the symptoms, especially the nausea and bearing-down pains on locomotion, entirely disappeared.

The first effect of the intra-uterine treatment was occasionally to increase these symptoms, or even (twice) to bring on a paroxysm of gastric distress. But on the day following, the patient felt perfectly well. The hyperemia, sensitiveness, and slight catarrh of the endometrium disappeared; the size of the cavity and the fibroids remained the same.

There is no doubt that the electrical method has the most important indications in the treatment of endometritis and metritis, and may indeed largely supplant other forms of local treatment.

To sum up in a word the fundamental considerations about intra-uterine treatment :

It is *required*, because disease of the endometrium rarely gets well without it, and because in disease of the endometrium all other utero-ovarian disease originates. Even infectious disease, often insusceptible of intra-uterine treatment because of the periuterine complications so rapidly established, is first manifested on the endometrium.

This treatment is *urgently* required, because of the severe symptoms often associated with an apparently slight lesion, and because of the tendency of the original disease to spread to the tubes, ovaries, and periuterine tissue, when treatment is much more difficult or may even be impossible.

The treatment is not devoid of dangers, but is nevertheless both *possible* and *effective* when these dangers are recognized and guarded against by suitable precautions. These precautions are based on minute observation of the details of the whole of the menstrual cycle.

When periuterine complications exist, the treatment must reverse the order of progress of the disease and proceed from the periphery of the uterine system towards the centre, the endometrium the last and the most cautiously attacked. Unless the

endometrium is healthy, periuterine treatment will only be partially successful in relieving the patient, though the relief may be great.

Treatment of endometritis is partly anatomical or surgical, and directed to the destruction of diseased tissue. It may, therefore, be suitably compared with the effect of cutting surgical procedures, as Emmet's or Simon's operations on the cervix, whose final effect is really produced on the endometrium. But the treatment is also partly physiological, designed to correct a morbid reproductive process, developmental, menstrual, or parturient. From this aspect it is to be compared with any method of constitutional treatment which succeeds in increasing the force of the circulation and raising arterial pressure, thus inducing the fundamental condition requisite to effect involution of subinvolved tissues.

ADVANCED PYELO-NEPHRITIS IN AN INFANT.¹

BY

EDMUND CHARLES WENDT, M.D.,

Attending Physician to the New York Infant Asylum and the St. Joseph's Asylum.
Curator and Pathologist of the St. Francis Hospital, etc.

(With two illustrations.)

EXTENSIVE pyelitis and pyelo-nephritis are rare conditions in the very young, although the lesser degrees of these associated affections are commonly enough found at post-mortems. The infantile kidney responds more promptly than that of adults to renal irritants. The exhibition of various medicinal substances, the specific poisons of scarlet fever, diphtheria, and other infectious diseases, even simple pyrexia, are very apt to produce transitory renal disturbances, and at times more serious mischief. Indeed, it has recently come to be quite generally admitted that congestion of the kidneys, acute desquamative nephritis, and even parenchymatous and interstitial changes, occur in infancy and childhood with formerly scarcely suspected frequency.

Nevertheless, such extensive degenerative changes as were

¹Read at the June meeting of the Manhattan Medical and Surgical Society.

found in the case presently to be described must be quite rare in infants, for the simple reason that the factor of time is lacking for the development of these essentially chronic lesions. I make this statement not only in justification of the publication of this case, but also because contrary views have been expressed by some writers, and notably by Hüttenbrenner.¹

From my own experience, which is a fairly large one, I am led to fully agree with Monti,² who says that Hüttenbrenner's opinion, in the absence of confirmatory statistics, is not entitled to acceptance.



FIG. 1.

For the history of this case I am indebted to Dr. Kerley, House Physician of the New York Infant Asylum (Mount Vernon branch).

Lizzie N., aged two years, came under observation in October, 1888. The child appeared to be rather delicate, having a pasty look, flabby muscles, and a distended belly suggestive of rickets. The country air, a nutritious diet, the use of cod-liver oil and iron, appeared to effect a change for the better. She improved to such an extent that no particular attention was paid to her

¹ "Lehrbuch der Kinderheilkunde."

² Gerhardt's "Handbuch der Kinderkrankheiten," Vol. iv., Part iii., p 426.

until April of this year. Then it was noticed that she became fretful, irritable, restless at night, and inclined to drowse in the daytime. Vomiting soon occurred once or twice every day, but the movements remained normal. The pulse and respiration showed no departure from the standard of health, but the child failed visibly and became rather emaciated.

A careful physical examination of the abdomen gave no clue to the causation of the vomiting, which was in no way influenced either by changes in her diet or the various remedies employed to check it.

Straining and retching now always occurred after food was taken, although stimulants were sometimes retained.



FIG. 2.

The vomiting was quite uncontrollable, and even the attempt to feed the child exclusively per rectum did not entirely check it.

On April 30th slight mucous diarrhea was noticed, and the rectal feeding was discontinued after May 1st. The irritability and vomiting continued, emaciation increased, and on May 8th the child died quietly, the temperature having for the first time throughout the course of the disease risen above the normal. At 2 P.M. the thermometer marked 102.4° F., at 5.30 P.M. it had risen to 104.6° F., and at 6 P.M. the child died.

Rigors, spasms, convulsions, or deep coma had not developed, and a diagnosis of kidney disease was not made during the lifetime of the patient. It may also be mentioned that mercurial inunc-

tions were employed a few days before death, with the idea that they could not be harmful, and that the wasting of undemonstrable syphilis might possibly account for the rapidly progressive malnutrition. No effect whatever was produced by the mercurial.

At the autopsy the following observations were made: The body was very pale and much, though not extremely, emaciated. The lungs showed moderate hypostatic congestion, with incipient pneumonia posteriorly on the left side. The base of the right lung was rather firmly adherent to the diaphragm.

The heart was small and bloodless, but otherwise normal.

There was no fluid in the abdominal cavity. The spleen was very small, pale, and flabby.

The stomach was large, its mucous membrane somewhat thickened and presenting numerous superficial ecchymoses. The intestines were pale, except in a few places where small areas of congestion of the mucosa were seen.

The liver was large, succulent, and friable. Numerous pale yellowish islands indicated disseminated fatty changes.

The condition of the urinary organs merits a more detailed description. The left kidney was small and flat (see Fig. 1). Externally it appeared lobulated, but the lobules were much larger than those of ordinary granular kidneys. The capsule was adherent in places. On section, turbid urine mixed with pus and mucus flowed out. The renal pelvis was much distended, and the calices were converted into a series of large and deep intercommunicating pockets. But little remained of the proper structure of the kidney. The medullary and interpyramidal portions were almost entirely destroyed. The narrow remnant of cortical substance was in a condition of infiltration and degeneration, such as is seen in adult "surgical kidney." Phosphatic deposits or concretions were not found in this organ. The right kidney (Fig. 2) was about twice the size of the left one, and its thickness was more than double that of the other. The surface was also lobulated, but the capsule was less firmly adherent. The pelvis was enormously distended, and a series of pouches extended deeply into the renal substance. The latter was less profoundly altered than the other kidney. Still, most of the pyramids appeared to be transformed into a semi-translucent, yellowish, gelatinous substance, with no trace of renal structure visible. Although the mucous lining of the pelvis and calices showed numerous ecchymoses, concretions or "sand" were nowhere discoverable.

Both ureters were enlarged and thickened, but showed no other abnormality.

The bladder contained about two ounces of turbid urine, with flakes and shreds of stringy pus and mucus. The organ was very much enlarged and its walls greatly hypertrophied. At the neck of the bladder this hypertrophy was so enormous as to suggest the presence of a neoplasm. The urethra was narrow but quite



JAMES B. HUNTER, M.D.



pervious, and an obstacle to the outflow of the urine was nowhere to be seen. No congenital malformation was found, and altogether the etiology of the case has remained obscure to me.

It seems to me idle to speculate upon the possible causation of the advanced processes of degeneration here encountered. Perhaps the hypertrophy of the bladder should be regarded an idiopathic one in the absence of a demonstrable exciting cause. The pyelitis and pyelo-nephritis would then be secondary to the vesical trouble, and, looked at in this way, the case is not entirely unintelligible. The rarity of such an occurrence in a female infant will, I believe, be admitted even by those whose experience is much larger than my own.

712 MADISON AVENUE.

IN MEMORIAM.

JAMES BRADBRIDGE HUNTER, M.D.

DR. JAMES B. HUNTER, who died June 10th, 1889, in the fifty-third year of his age, was born in Geneva, N. Y., in 1837. He served in the Union army during the war, first as lieutenant of an Ohio regiment, and subsequently on the medical staff of the Sixtieth Indiana; in the latter capacity he was with Grant at Vicksburg. At the close of the war he entered the College of Physicians and Surgeons of New York, from which institution he graduated in 1866. After a course of study abroad, he returned to this city and became one of the early internes of the Woman's Hospital, with which he continued to be actively associated until the time of his death, holding the position of assistant surgeon from 1871 till 1878, when he was appointed attending surgeon. Dr. Hunter gave his best energies to the Woman's Hospital, and reflected no less lustre upon that honored institution than he derived from his connection with it. Even the claims of a large and important private practice were considered as secondary to those of the hospital. The great clinical advantages which he enjoyed were so fully improved that he quickly ripened into an accomplished diag-

nostician and surgeon. While his ideas were naturally moulded by those of the distinguished teachers with whom he was associated, he was eminently progressive and was wedded to no outworn theories. He was willing to learn even from those who were many years his junior, and was ever ready to adopt the new, which he had carefully proven and found superior to the old. This disposition made Dr. Hunter a growing man and one whose opinion was always received with respect.

He was identified not only with the Woman's Hospital, but with the New York Cancer Hospital, of which he was one of the founders and the senior surgeon. He was President of the New York Polyclinic and occupied the chair of gynecology in that institution. As consulting surgeon to the Woman's Infirmary he rendered efficient service by his counsel and surgical skill.

His was a life of ceaseless activity; rest with him meant only change of occupation. At an age when most men are content to devote less attention to hospital work, he was still as tireless and enthusiastic as when he first entered upon his professional career. The judgment of his associates will not pronounce him a brilliant man, but, better far, a thoroughly earnest and conscientious one. He was seen at his best at the operating table. The most captious critic was obliged to admit that his technique was faultless. He excelled in plastic work, but as a laparotomist his absolute coolness, neatness, and attention to details were unsurpassed. Many surgeons have shown more pretentious statistics, but few have ever operated with less regard for effect and more consideration for the weal of the patient.

As a diagnostician he possessed in a high degree the *tactus eruditus*, derived from an exceptional experience wisely improved. He made no "snap" diagnoses, neither did he hesitate to express doubt when he felt it. His opinion, when delivered, was brief and to the point; it never failed to convince. As a consultant he was free from that narrowness which is too often the opprobrium of the specialist; the long and successful practice of general medicine had fitted him to view disease broadly, and not through the medium of the pelvic organs alone. As a public speaker Dr. Hunter did not appear at his best, since his modesty and his desire to avoid notoriety led him to be exceedingly concise in his remarks.

He usually condensed within a few sentences his experience on the subject under discussion, when a more superficial or more verbose man would have made a lengthy harangue. Of his successful cases he said little, carefully refraining from attributing success to his own skill. As a teacher Dr. Hunter did not aim at oratorical effect. His style was terse, his teaching eminently practical. It was remarked that his careful statements were more convincing than the brilliant periods of those who spoke from books rather than from personal experience.

During his early professional career, Dr. Hunter's tastes seemed to be purely literary. He devoted a large proportion of his time to the editorial work of the New York *Medical Journal*, which flourished under his management. As his practice increased, he was obliged to limit his literary labors—a fact which he always regretted. His contributions to current medical literature were short and unpretentious, but they were widely read. Their attractiveness lay not in their brilliancy of style, but in their sincerity and freedom from unsupported statements. The writer's ideas were expressed in the fewest possible words. Among his most important papers on special subjects were the following: "Endometritis Fungosa," "Mural Abscesses following Laparatomy," "Persistent Pain after Laparatomy," "Pregnancy as a Complication of Pelvic Disease," "The Technique of Vaginal Hysterectomy," and "Series of Fifty Cases of Abdominal Section" (two papers). A paper on Two Hundred and Fifty Cases of Laparatomy was in course of preparation. He had been engaged for several years previous to his death in the composition of a manual of operative gynecology, a work which would have been peculiarly valuable as representing the results of his enormous experience in this branch of surgery.

Personally Dr. Hunter was reserved and little inclined to confidences. His intimate friends were few, but to these he was most faithful, showing to them occasional glimpses of a warm heart of which the world knew little. The affection and unswerving loyalty of his patients were the best proof of his kindly, sympathetic nature. Sorrow and suffering never appealed to him in vain. The world will never know his carefully concealed charities. Some of the most sincere and touching expressions of grief at his death came from poor patients

whom he had in secret befriended. If ever a man may be said in the best sense to have lived a "double life," we may thus characterize the career of this earnest and useful physician. The fragrance of his good deeds will outlast the reputation of the distinguished surgeon.

Thus ends a busy, many-sided life, a career not brilliant and comet-like, but steady, progressive, broadening with every year. Constant, unflagging devotion to duty marked its beginning and its end. Such a life is an inspiration in this age of rapid, inexplicable success, too often followed by as sudden failure. There was nothing phenomenal in Dr. Hunter's success; it was the inevitable result of power constantly applied to one end.

A stone drops into the swiftly flowing stream, and its ripple is buried by the hurrying waves. A good man dies, and his name is apparently swallowed up in the onward rush of time; but, as with our dear friend, we feel the inspiration of his life long after he has passed into the silent land.

H. C. COE.

The following resolutions were adopted by the New York Obstetrical Society:

Whereas, It has pleased Almighty God, in His infinite wisdom, to remove from our midst our friend and colleague, James Bradbridge Hunter, in the prime of his life and in the morning of his usefulness; therefore, be it

Resolved, That while we bow in submission before His supreme will, we recognize in His fiat the loss of one beloved and honored by us all for his gentle virtues and manly qualities; of one who will long be regretted, and whose place will forever remain unfilled amongst us.

Resolved, That in his removal the entire profession of medicine in America suffers a loss which cannot fail to be appreciated by all connected with it.

Resolved, That the kind sympathy of this Society, for which he has done so much, and its sincere condolence be tendered to his bereaved family, and that it cause a copy of these resolutions to be spread upon its minutes, published in several of the daily and medical journals of the city, and transmitted to his immediate relatives.

T. GAILLARD THOMAS, M.D.,
CLEMENT CLEVELAND, M.D.,
HENRY CLARK COE, M.D.

AUGUST BREISKY.

BORN MARCH 25TH, 1832 ; DIED MAY 26TH, 1890.

THE medical profession has sustained a severe loss in the death of AUGUST BREISKY, the genial, talented, and industrious professor of obstetrics and gynecology at the University of Vienna. He had been ailing for several years, but had manfully continued his work until compelled to relinquish it during the past winter.

Breisky was born at Klattau, in Bohemia, studied medicine at Prague, and graduated in his twenty-third year. After serving as assistant to the chair of pathological anatomy for a time, he assumed a similar relation to the obstetrical clinic under Professor Seyffert (who, by the way, advocated the saline diarrhea treatment for puerperal fever—that is, septicemia—as long ago as 1860; his theory was ridiculed at the time, but is now proven to be well founded, at least in the similar condition following laparotomy). In 1865 Breisky published his first important work, on “The Influence of Kyphosis on the Formation of the Pelvis.” In 1866 he was called to the chair of obstetrics at Salzburg, and a year later to that of Berne, where he remained seven years, leaving to follow a call to the same chair at the German Faculty of the University of Prague. While here he superintended the building of the new Maternity and wrote his well-known book on “Diseases of the Vagina” (translated into English and published in 1887 by Messrs. Wood & Co. as part of the “Encyclopedia of Obstetrics and Gynecology”), and a number of articles on myomectomy, Porro’s operation, pelvic measurement, kraurosis (a peculiar form of dermatitis) vulvæ, etc. On the death of Spiegelberg, in 1881, he declined a call to Breslau, receiving from his students and the city of Prague an enthusiastic ovation for his decision to remain with them. In 1886, on the retirement, by age and infirmity, of Professor Spaeth, Breisky was called to his chair, the so-called Second Obstetrical Clinic, at the University of Vienna. He lived but a short time to utilize the large material now at his disposal, and was suddenly seized during a myomectomy with the symptoms of his fatal malady, the nature of which, curious to say, the notices of his death in the Vienna papers fail to mention.

Breisky was a hard worker, a conscientious, excessively pains-

taking, if not a brilliant operator, and a peculiarly genial and kindly man. The writer of this sketch well remembers the hearty, frank cordiality, the winning smile, and the warm grasp of the hand with which he was greeted by Breisky at their first meeting in the wards of Tarnier's clinic at Paris, in July, 1881. His manner was such as to attract me at once, and to place me, the younger man, without an effort, on a footing of equality and good-fellowship. And the pleasant evening and Sunday spent at Boulogne with Tarnier, Breisky, Budin, Ribémont, and Bar, on our way to the Congress in London, will ever remain fresh in my mind; the droll humor and *bonhomie* of Tarnier, the gentle, kindly smile of Breisky, the earnest, serious, but thoroughly attractive conversation of my dear friend Budin, the pleasant *camaraderie* of Ribémont and Bar, appear before me as though it were but yesterday. Breisky was the first of that jolly party to give up the fight. Who will be the next?

Men who combine the scientific qualities which make a teacher and practitioner of medicine of the highest order, with the amiability, truthfulness, and utter absence of malice toward their fellow-men, as did Breisky, are hard to find and still harder to replace.

P. F. M.

THE AMERICAN MEDICAL ASSOCIATION.—PROCEEDINGS OF THE SECTION OF OBSTETRICS AND GYNECOLOGY.

FORTIETH ANNUAL MEETING, HELD IN NEWPORT, R. I., JUNE 25TH, 26TH, 27TH, AND 28TH, 1889.

(Abstract.)

First Day—Tuesday, June 25th.

The Section was called to order by the Chairman, DR. WM. H. WATHEN, of Louisville, Ky., at 3 o'clock P.M. By vote of the Section, the reading of the Chairman's annual address was postponed until Wednesday, June 26th.

The first paper was then read by DR. HORATIO R. STORER, of Newport, R. I., entitled

THE MEDALS OF BENJAMIN RUSH, OBSTETRICIAN.

In bringing before the Section photographs, from his collection, of two very rare medals of Dr. Rush that were struck at the U. S. Mint

in 1806, several years before his death, and which must therefore give his true likeness, since Dr. Rush was then Treasurer of the Mint, and will therefore be of valuable assistance when the monument to his memory which the Association has undertaken comes to be built, Dr. Storer presented much valuable evidence from Rush's works of his knowledge and ability as an obstetrician, in particular quoting one passage wherein Rush distinctly foretold and dwelt upon the supreme importance of the induction of artificial anesthesia during labor, declaring that, while sensibility should be temporarily annulled, the irritability and contractile power of the uterine nerves should remain unaffected. The quotation referred to is a most extraordinary one, and proves that Rush anticipated by fifty years the great discovery. It seems to have escaped the notice of all writers save Channing, Gaillard Thomas, and Faget of New Orleans, and its recall at the present moment may assist toward placing Rush upon the high eminence in professional estimation which, as an obstetrician no less than as a general practitioner and a sanitarian, he in reality should occupy.

The second paper was by DR. W. W. POTTER, of Buffalo, N. Y., entitled

NOTE ON SOME GYNECIC USES OF BORIC ACID.

A *résumé* of personal experiences with the drug was given, in which it was ascertained by the author that boric acid is a most excellent substitute for iodoform for many purposes for which the latter drug is frequently employed. It is chemically suited to neutralize the acrid secretions of the uterus and vagina that irritate the genital tract, and which sometimes cause sterility by destroying the fecundating power of the spermatozoa.

Through its free use in the vagina, it contributes to the better management of uterine and ovarian displacements by vaginal tamponnement, permitting the retention of the tampon for a week or more without putrescence; for similar reasons it makes the V. tamponnement a more potent agent in the treatment of pelvic inflammatory residues. Through its agency the manipulations of the genital tract become less frequently necessary, because of the more lasting antiseptic properties of this drug, and because of the odorless, staining, and non-irritating qualities.

After plastic operations in the genital tract, it may be used freely in the vagina, and with boric cotton furnishes a suitable antiseptic dressing to guard the lines of coaptation from the secretions that may interfere with perfect primary union.

DR. HENRY O. MARCY, of Boston, Mass., read a paper on

CHRONIC INVERSION OF THE UTERUS,

with the demonstration of a new method for its cure. After sketching somewhat briefly the history of chronic inversion of the uterus and its etiology, Dr. Marcy entered more fully into the pathological changes that ensue. These were illustrated by a considerable num-

ber of large crayon sketches, from the monographs of Croase of more than half a century ago, from McClintock, Martin, Barnes, and others. Until 1858, when the late Dr. James P. White, of Buffalo, first published his monograph upon chronic inversion of the uterus and its reposition by continuous elastic pressure combined with taxis, no systematic effort for the cure of this distressing accident had been advocated. Although cases of reposition were on record, the profession had considered them as accidental curiosities. The methods of Tyler Smith, Wing, Barnes, Thomas, and Aveling, of reduction by continued elastic force, were analyzed, and shown, in the opinion of the writer, to be at the most modifications of Dr. White's original method, and often of doubtful value, no new principle being involved. Undoubtedly to Dr. White and to America should be accredited the modern operation by which, at the least, a large proportion of cases of chronic inversion of the uterus can be safely restored, giving to the patient original health and vigor.

Dr. Marcy somewhat critically reviewed the experience of Dr. Thomas and his followers in first performing laparotomy, in order to dilate the cervical constriction and thus aid in the reposition of the organ. This he admired as an evidence of the brilliant originality and fertile genius of this distinguished author, yet he could not help doubting if it was based upon sound mechanical and physiological law. This seemed especially to be called in question by the analysis of the recent experiences of Dr. Mundé, of New York, where, after repeated dilatation to the uttermost through an abdominal incision, the cervical closure immediately followed like the grip of a vise, which rendered every effort at reposition abortive. Again, although no harm is reported to have been occasioned by the severe pressure to which the Fallopian tubes are necessarily subjected, or mention made of the same by any author, it seems hardly possible that these important organs can escape serious damage by such manipulation.

Twelve years ago, after a careful study of the subject, Dr. Marcy believed that all the above methods were essentially faulty, in that the fixation of the counter-opposing force was uncertain and doubtful. By the method of Dr. White, counter-pressure over the abdomen was, in a measure, relied upon; but the methods of all the other authors for the application of continuous elastic force, often applied for days together, was only the vaginal attachment of the cervix and pressure upon the neighboring organs. It seemed to him both simple and rational to utilize a single force in the power applied at the same time continuously upon both cervix and fundus, and in this way to convert the constricting force into a power to aid still further in its reduction. To this end he passed long ligatures of coarse silk deeply through the cervical tissues, which he determined were possessed of ample resisting power. The perfected instrument for the reduction of the inverted uterus which was exhibited by Dr. Marcy seemed simple and yet possessed of suffi-

cient power. The distal end consists of a cup-shaped extremity for the reception of the fundus. The deep cervical ligatures, four in number, are attached to a movable sleeve adjusted upon the shaft of the instrument. By means of a screw in the handle, pressure is brought to bear upon a concealed spring, and the force applied is at once determined upon a graduated scale showing the amount of pressure. Dr. Marcy had but one case to report, which came under his observation within the year. Three months after delivery a prolonged effort by taxis proved unavailing. By the method above described, Dr. Marcy completely restored the uterus in twenty-six minutes under a maximum force of eight pounds. The sutures were easy of application; they held perfectly, and the operation was conducted throughout under irrigation, and afterward the vagina was lightly tamponed with iodoform wool. Recovery was rapid, and the patient is now well.

DR. WILLIAM T. LUSK, of New York, said that cases of inversion of the uterus were fortunately rare, and that his own personal experience with the accident had been limited to a single case. After manipulating to restore it for an hour and a half, he became so fatigued that he invited an assistant to continue the work, when it very soon went to its place. In describing the various methods recommended to effect reposition, he referred particularly to that where it had been suggested to introduce two fingers of one hand into the rectum, and two of the other into the bladder, to catch hold of the ring, and then with the thumbs to push the fundus through the dilated ring; stating that, though this read well in the books, it was very difficult to practise. Alluding to the difficulties of diagnosis, he said that more mistakes had been made in this than in almost any other condition of similar import with which he was acquainted. He spoke of abdominal incision as a useful method of diagnosis in doubtful cases, and thought the method recommended by Dr. Marcy certainly promised well, and he should use his instrument if opportunity should present.

DR. CLEMENT CLEVELAND, of New York, said that his experience was also limited to a single case in a service of fifteen years in the Woman's Hospital. In this half a dozen attempts at diagnosis had been made, when finally the operator had the courage to remove a fibroid, which revealed the true condition. Dr. Marcy's instrument appealed to his judgment so strongly as a useful one that he should try it at the first opportunity.

DR. JOSEPH PRICE, of Philadelphia, read a paper entitled

A SERIES OF FIVE HUNDRED CONFINEMENTS IN A MATERNITY.

The series extended nearly to six hundred cases before a death. This death was due to eclampsia, the woman having had several previous attacks. The series embraced numerous cases of abnormal labor, among others the delivery of a dwarf with ankylosis of the hip-joints. The manipulation of the patients is antiseptic to the highest degree. Before entering the delivery room the patient receives a bath, and the vagina is washed out with a bichloride solution, 1 : 3,000, just at the beginning of labor. After-labor pads of

antiseptic jute are applied to the vulva, first cleansing the parts with the mercuric solution. The woman is then removed to the lying-in ward, where she remains for ten days, and thence goes to the convalescent ward, where she remains until finally discharged. The pads are changed every six hours and burned. No wash-rags, sponges, or cotton are allowed in the house, the jute serving all the purposes for which these are generally used. The sanitary condition of the house is as near perfect as can be made; the hospital portion is shut off from the closets and bath-rooms, which latter are in towers adjoining the building, communicating with it by corridors. The corridors are wide and so arranged that the air is being constantly changed, and the ventilation is as perfect as can be made.

DR. THOMAS OPIE, of Baltimore, said he had visited the Preston Retreat, to which the paper referred, and considered it a model maternity, and as near perfect in its sanitary conditions as it is possible for skill and science to arrange. He could readily understand how such a maternity excels the records of private obstetrical practice in its results.

DR. PRICE, in closing, wished to refer to an important point in the sanitary arrangement of the Retreat: he considered the removal of the closets from the house as the all-important factor in contributing to the results obtained, for as soon as the plumbing was isolated in the towers the temperature charts became normal in their showing, and now it is the rarest thing for them to go above it. In an extensive out-practice in the alleys and courts of Philadelphia, he observed that high temperatures were present, not where the room was filthy, but where the closets were in the houses; the febrile disturbance almost invariably occurring in the better classes of patients, and not in the poorer.

DR. HENRY D. FRY, of Washington, D. C., read a paper entitled

THE APPLICATION OF FORCEPS TO TRANSVERSE AND OBLIQUE POSITIONS OF THE HEAD—DESCRIPTION OF NEW FORCEPS.

Varied as are the designs of the obstetric forceps, the method of employing them is as little fixed as the instrument itself. This lack of uniformity proves the non-existence of a scientific basis.

In France, the blades of the forceps are usually applied to the sides of the child's head; in England, Austria, and Germany, to the sides of the mother's pelvis. No single doctrine is so exclusively accepted as to make the practice of that country uniform.

To obtain the views of the profession of this country, circular letters were sent to all teachers of obstetrics and to numerous practitioners located in every State in the Union. Eighty-two replies were received, with result as follows: forty-two always adapt the blades to the sides of the head when possible; thirty-one always apply the blades to the sides of the pelvis; nine recognize no rule and employ both methods. Some who follow the first practice apply the blades to the sides of the pelvis when the head is high, and, after bringing the part down, remove and reapply the instrument to the sides of the head. Others try to rectify oblique and transverse positions before applying forceps. On the other hand, some who follow the method of applying the

blades to the sides of the pelvis recognize circumstances that induce them to adapt the blades to the sides of the head.

The chief objection made against the bi-parietal application is the difficulty, and oftentimes impossibility, of accomplishing it. The difficulty arises in high situations of the head when occupying an oblique position, and in transverse positions of the head, whether at the brim or in the cavity.

Transverse positions of the head offer special difficulties. The most aimed at in these cases is to locate the instrument in one or other oblique diameter of the pelvis. Many obstetric writers claim that these positions are rare. The author maintains that they occur not infrequently, and in support of his position quotes Cazeaux, Charpentier, Mme. Lachapelle, Baudelocque, Moriceau, Poulet, Ramsbotham, and Spiegelberg.

Minor degrees of pelvic contraction or disproportionately large fetal heads are casual agents of transverse positions at the brim, and the opposite conditions, a roomy pelvis or small head, produce and maintain the same positions in the excavation.

The difficulties met with in applying forceps to the bi-parietal diameter of the head when oblique or transverse are due to lack of a proper instrument. Forceps with the usual pelvic curve placed in the edge are valueless. Only when applied laterally, with the concave edge forward, does the pelvic curve of the instrument conform to the axis of the pelvic canal.

If turned to one side or the other for the purpose of grasping the sides of the head, the pelvic curve of the blade departs from the line of the pelvic axis, and the tip of the anterior blade is projected backwards.

To overcome these disadvantages, Dr. Fry designed forceps with the pelvic curve on the flat surface (antero-posterior). With such an instrument the head can be seized in its bi-parietal diameter, whether high or low, and whether placed obliquely or transversely. These forceps are useful in labor obstructed by diminished conjugate, as the ability to compress the bi-parietal diameter of the head more than compensates for the space occupied by the blades. With this instrument a child at full term and weighing six and one-half pounds was delivered through a conjugate of two and three-quarter inches. The use of the forceps, however, is not restricted to labor in flat pelvis, but to all cases in which, from failure to rotate, the head is oblique or transverse.

A compression screw is attached to the instrument for use when axis traction is desirable by means of the rod. The latter is hooked into the fenestrum on the anterior blade, and is superior to other methods, because traction can be made downwards and backwards, from behind the symphysis, parallel to the axis of the inlet. These forceps are not intended for universal application, but only for the cases for which they are especially designed. They will be found suitable for all high operations.

The obstetrician should not be limited to the employment of one instrument, but should be expert with several and select the one suitable for each case. The advice of some eminent authorities (Simpson, Playfair, Leishman), that one pair of forceps should be made to answer for all this class of work, has had and still has its evil influence.

From information derived by circular letters it was ascertained that 30 obstetricians employed but one variety of forceps, 53 used different varieties, and 30 of the latter recognized the value of axis traction in high operations, and 11 used short forceps in low positions.

According to the views expressed, the only conditions generally recognized for selecting the different varieties of forceps were:

First. The high or low situation of the head.

Second. The compressive power of the instrument.

Accepting the opinion of the majority of replies expressed by the circular letters regarding the advisability of applying the blades to the sides of the head when possible, and recognizing the difficulties in the way of accomplishing it in many cases, a third indication advanced is the oblique and transverse positions of the head, for which, and to overcome the difficulties mentioned, is submitted the antero-posterior forceps curved in the flat.

DR. WM. S. STEWART, of Philadelphia, then read a paper entitled

WHEN SHOULD THE OBSTETRIC FORCEPS BE USED? AND WHAT FORM OF INSTRUMENT IS REQUIRED?

The indications for the use of the obstetric forceps he classified as follows:

First. Where speedy delivery is necessary in the interest of either mother or child, as in eclampsia, hemorrhage, exhaustion, prolapse of the cord, etc.

Second. Where the ordinary forces of labor are insufficient to overcome the obstacles to delivery, as in narrowing or partial obstruction of the birth canal within certain limits, uterine inertia, large fetal head, malpositions, and where the head is engaged in the pelvis and there has been no advance for some time, the "rebound" during the interval between the diminishing pains having ceased.

In addition it is of importance in all cases, before applying the forceps, to be assured of the existence of the following conditions:

First. That the membranes are ruptured.

Second. That there is complete dilatation of the os and retraction of the cervix.

Third. Knowledge of the position of the presenting part.

Fourth. Emptiness of the bladder and bowel.

He next asked the following question: What form of obstetric forceps should be employed? and presented, by way of answer, forceps that he had devised which worked by parallel instead of cross handles. (For description and illustration of this instrument,

see *Trans. Am. Ass'n Obstetricians and Gynecologists*, Vol. I., 1888, p. 157.)

In twenty-six (26) cases, all of which undoubtedly required instrumental delivery, he had used these forceps with results which were indeed surprises, both on account of the facility with which they were applied—either blade first—the slight amount of traction required in all of the cases, and the entire absence of any disfigurement to the children or evidences that in a single instance the compression had been too great.

It was his conviction that when the obstetric forceps are required, the use of this instrument will be attended with fewer risks to the mother, greater safety to the child, and much less difficulty and anxiety to the accoucheur.

DR. THEOPHILUS PARVIN, of Philadelphia, said that the forceps presented and described by Dr. Fry are the revival of an old device, and he presumed the time would come when some one would revive Dr. Fry's instrument. He considered its range of application narrow, and questioned its necessity. As to its claim as an axis-traction forceps, its principles were at variance with those recognized as a requisite in such an instrument. The traction attachment pulled on one side only, which was like drawing a wagon by one shaft.

Dr. Stewart's instrument he considered complicated, awkward to use, and an unnecessary addition to the armamentarium of the obstetrician. The power applied was so far from the point of resistance as to interfere with the delicacy of its operation. The handle of the ordinary instrument was better adapted to traction than that of Dr. Stewart.

DR. JOSEPH PRICE considered Dr. Fry's forceps a dangerous instrument, having no claim to axis traction. Smith's or the earlier method accomplished axis traction much better than this one, as it was nothing more than a vectis—even more dangerous by the presence of two blades, a long and a short one.

DR. JOSEPH HOFFMAN, of Philadelphia, regretted, in discussing the forceps presented by Dr. Fry, that a pair of true axis-traction forceps were not present. It could then be easily seen that Dr. Fry's instrument wholly failed in any claim for axis traction. Three requirements must be fulfilled in order for such claim to be substantiated: *First*, the traction rod of whatever device must be applied at the centre of the blade; *second*, the force must be applied as near as possible to the child's head; *third*, the traction must be made in the pelvic axis. In every one of these three requirements these forceps fail. As Prof. Parvin aptly illustrates, this attempt here at axis traction is that of pulling a wagon by one shaft.

Whatever else the instrument is, it is not an axis-traction forceps.

As to Dr. Stewart's instrument, it has no claim to axis traction whatever. The complicated device to prevent dangerous compression of the child's head is useless, because it does not at all modify the compressive power of the instrument by any direct force applied. The complication is one without advantage, and therefore objectionable.

DR. JOSEPH TABER JOHNSON, of Washington, said that Dr. Fry's paper opened up a subject in regard to the forceps that he thought

nearly or quite settled; but since hearing it he thought there might be something in his method, and would try the instrument should opportunity present. And so with Dr. Stewart's forceps, which he would also obtain whenever they were in the market.

DRS. FRY and STEWART closed the discussion in a defence of their instruments, making substantially the same claims for them as in the text of their papers respectively.

DR. THOMAS OPIE, of Baltimore, Md., read a paper entitled

THE KINSHIP BETWEEN OBSTETRICS AND GYNECOLOGY.

He said: The close relationship between these two branches of medicine is so well known and so generally accepted that it would seem at first glance a waste of words and time to discuss the subject.

There are, however, among gynecologists some who look disdainfully upon obstetrics and aspire to be classed with the general surgeon.

The disputes over the border line of abdominal surgery, the claim of mammary-gland diseases by the general surgeon, and the covetous yet astigmatic eye with which he views the promised land of gynecology, have induced me to ask of the Section a brief yet patient hearing.

Biblical history proves that midwives were employed as aids in labor fifteen hundred years before the Christian era.

Probably from the foundation of the world up to the invention of the obstetric forceps, illiterate women maintained an exclusive dominance over the field of midwifery. The male surgeon was called, perchance, when the laboring woman was *in extremis*, for the purpose of forcibly removing the child which was threatening the life of the mother.

Obstetrics, thus rude and humble in origin, groped along for centuries. About four hundred years before Christ three books improperly imputed to Hippocrates appeared, viz.: "The Nature of Woman," "The Diseases of Women," "On Superfetation." Here we find conclusive evidence of the early association and close study if not the practice of obstetrics and gynecology.

- It is noteworthy that from time immemorial the invention of instruments has exercised, both in medicine and surgery, a potential influence for advancement and success. The Arabians used instruments which corresponded with our obstetric forceps and gynecological speculum.

The first faint glimmer of light which, for our guidance, broke through the blind darkness of midwifery, was when surgery conservatively offered the vectis through Roonhuysen. The obstetric forceps now generally used were then half-discovered, and about the year 1700 entered upon their life-saving mission.

This God-given instrument has been a pivotal influence. By it a new force and inspiration were aroused. At its hands the full equipment of the surgeon-craniotomist received a deadly blow.

Gynecology furnishes no less striking an illustration in the inven-

tion of that God-inspired surgeon, Sims. The speculum of our day is the very foundation stone of gynecological surgery. It has opened up a relatively new field and thrown a flood tide of light on the dark corners of the reproductive organs.

Obstetrics and gynecology, ancient alike in their birth and practice, have alike realized the fickle fortune of advance and retrogression. The insuperable obstacles to obstetric advance have impeded gynecological development. Gynecology is a supplement to obstetrics. It is by far the greatest part of obstetric surgery. Their adoption is tried, they are bound together by hooks, specula, and forceps of steel. They moderate, rectify, and guide each other for the sovereign purposes of cure. The cry started by the surgeon and adopted by the accoucheur has gone down the ranks of the profession, that high death rate implies, unqualifiedly, putrescence, filth—filth of the doctor, filth of the nurse, filth of the intruding visitor, filthy raiment, filthy atmosphere, the personal filth of the patient.

Not many years ago the popular judgment was that lying-in asylums should be abolished; now the managers of these institutions challenge the private practitioner to produce statistics equally as good as theirs.

Special gynecological hospitals show far better statistics nowadays than general hospitals or private homes. The introduction of antiseptics has reduced the fatality in gynecology and obstetrics in every land.

The civilized and the uncivilized world alike have been barriers to the deliverance of woman from the thralldom of diseases peculiar to her sex. To-day the specious plea of modesty still stays the hand of the helper and places barriers in the onward march of a noble calling.

The laws of the Mahommedans forbade the examination of women by men, and thus prevented progress in gynecology and obstetrics.

Out of a supposed regard for the modesty of female patients, the Board of Governors of the Woman's Hospital in the City of New York, in 1874, made a regulation limiting the number of visitors to any clinic in that institution to fifteen, and thus occasioned the resignation of the founder, Dr. J. Marion Sims.

Sims was world-renowned; he not only organized and moved an ambulance corps in the Franco-Prussian war, but by his originality, suggestiveness, and force aroused and inspired medical science throughout Europe. In his fertile brain originated the paragon suggestion of the present century as to abdominal surgery. He reasoned that gunshot wounds of the abdomen admitted of easy drainage in proportion to their proximity to the pelvis. He suggested, in connection with the case of the lamented President Garfield, that abdominal drainage might have served a good purpose. He was a great obstetric surgeon—ay, more, the leading gynecologist of his day. He transcended general surgery, and the living world sat at the feet of his genius.

The definition of obstetrics given by the most popular medical author and teacher of obstetrics and diseases of women in this country twenty-five years ago, Professor Chas. D. Meigs, may be accepted as a faithful reflex of the status of these branches at that time. He says: "Obstetrics is the science of woman's nature, diseases, and accidents, and is a copious and comprehensive science, while midwifery is the art of assisting women in labor and guiding their conduct throughout the following confinement."

I mention this definition of obstetrics to show that twenty years ago these two branches were in a state of unification and were taught in every school throughout the world by the same professor.

In the large majority of medical schools at this time, these two branches have been divided, in order that they might both be taught more thoroughly and studied with the closeness their increasing importance demands.

Gynecology has grown out of obstetrics. It is an obstetrical development and supplement. They are now separated, but not divorced.

To be a good gynecologist presupposes a thorough knowledge of obstetrics. To be a well-grounded obstetrician requires considerable knowledge of gynecology.

It has been said, looking at the question from the standpoint of expediency, that the obstetrician as gynecologist covers up his own blunders. So might it be. He should repair them, because his act subserves the noble, humane purpose of cure. He should be able to take the stitch which saves nine. As obstetrician, one is not necessarily disgraced who has perineal tears, though they are in many instances preventable. Every obstetrician in full practice will have them; and if any one denies the charge, it may safely be said of him he does not examine his patients closely after labor.

But few practitioners, after reading the many admirable recent works on gynecology and obstetrics, can decide against the advisability of primary perineorrhaphy. I am aware of but one author, Prof. Charpentier, who advocates the postponement of the operation until after involution is completed. American gynecologists, as a rule, believe that lacerations of the perineum often cause subinvolution; that, when deep ones are neglected, they are very liable to cause physical detriment, neuroses, and possibly marital infelicity.

There are other grounds on which obstetrics and gynecology stand as one and inseparable. Bleeding from a lacerated cervix is first recognizable by the attending obstetrician, and should be stitched by him, not only to stop hemorrhage, but to promote involution and to forestall the ingress of the germs of disease.

The process of evolution, or physiological hypertrophy, having been accomplished during pregnancy, the converse law of physiological atrophy, or involution, must follow. The obstetrician alone has the opportunity, as he has the special training, for the early recognition of subinvolution. Should he fail to acquaint himself

with the pathological state of the organ, the best chance has lapsed—a chronic disorder is the result. It may be the whole system of the reproductive organs is deranged and constitutional impairment ensues. The case, having progressed and intensified, has glided by insensible gradations out of the field of obstetrics and into that of gynecology.

How intricate, and in many cases past comprehension, the mazes of early pregnancy! How stealthily and unexpectedly this condition becomes an element of most serious apprehension and responsibility for the obstetrician and gynecologist alike! The differentiation is an ever-present possibility with both. The pitfall is doubly dangerous since it involves two precious lives. The field is identical; the nicest realizations of digital touch, the cleverest use of the bimanual, a knowledge of the various modes of manual exploration—all concentrate here.

The very nature of the work of the gynecologist seems to demand that he should first be an obstetrician. To know the abnormal or pathological we must be familiar with the normal or physiological. Carrying about with us our mental norm, we can best by comparison with it detect abnormalities.

The diagnosis of displacements and deformities of the uterus, of ovarian and uterine tumors, extra-uterine pregnancy, and many other conditions, the outgrowth of obstetrics, can best be dealt with by the obstetrician. The general surgeon has but little opportunity of obstetric touch, which is the keynote to the solution of most of these problems.

To fully and accurately estimate the local damage done in instrumental labors, to decide upon the possible detriment, immediate or remote, as bearing upon the important duties of mother and wife, demands at our hands as medical custodians the most intent thought, the most scrupulous, conscientious care, the highest order of manly resolution.

What kind of surgeon, then, best subserves our purpose? One who is thoroughly conversant with labor, not only in approved theory, but in a large and varied practical application of it at the bedside. Moreover, he must be familiar with the instruments with which obstetrical injuries are inflicted, both as to their use and abuse.

We are wont to decry the illiterate females who acquired their information by experience. Alas! to-day we much too often find wives and mothers who are in the hands of old women of both sexes.

It cannot be denied that obstetrics and gynecology are interdependent. "United they stand." Like Siamese twins they have stood for ages. To separate them would do injury to both. It would inflict violence on methodized knowledge, which is science.

The general surgeon has from time immemorial scorned the forlorn and uninviting province of obstetrics. He may have viewed with interest the improvements in the obstetric forceps; he has

possibly been eager for the revelations of the speculum. He said not a word when the obstetrician stitched the perineum. When the gynecologist sewed up the lacerated cervix, he was, unmurmuringly, a passive looker-on. But when he ventured further into those sacred precincts, that territorial reserve of the reproductive organs, the abdominal cavity, the unpardonable sin was committed. He could stand it no longer. "'Tis the jingling of the guinea" which is the inspiration of the thought of breaking up the time-honored and natural alliance between gynecology and obstetrics.

In that last great day when all men shall be judged, not before men but before angels, for the deeds done in the body, may we not hope to stand as in life, side by side, and thus cover a multitude of sins—the obstetrician by his record for honest, earnest protest against feticide, and for thus having promulgated the law, "Thou shalt not kill"; the gynecologist from the high vantage ground of a ripe experience, for preaching and practising physical redemption in his timely warnings against the crime of conjugal onanism, limitation of families, and sterility?

Second Day—Wednesday, June 26th, 1889.

The Section was called to order at 3 o'clock by the Chairman. The election of Section officers for the ensuing year, provided by the by-laws to be held at this time, resulted as follows:

Chairman, William Warren Potter, of Buffalo, N. Y.

Secretary, Joseph Hoffman, of Philadelphia, Pa.

The Chairman, DR. WILLIAM H. WATHEN, then delivered his address. Subject:

THE PATHOLOGY OF ECTOPIC PREGNANCY, AND PELVIC HEMATOCELE.

The next paper was read by DR. THEOPHILUS PARVIN, of Philadelphia, Pa., entitled

CASUISTRY IN OBSTETRICS.

After defining casuistry as the science of cases, he proceeded to consider the relative importance of various obstetric operations, the ethics of the marital relations during pregnancy, and stated that the progress of science offers new questions in casuistry to the obstetrician, as instanced by the fact that, when the ophthalmologist announces to the obstetrician that he has discovered albuminuric retinitis in a pregnant woman, and that her continued pregnancy is at the peril of her vision, possibly of her life, it originates new problems in practice, and the question is presented as to what he is to do to avert the impending danger.

The subject of craniotomy, that has been and is the subject of so much professional controversy, received attention, and was compared in its value to Cesarean section, to the so-called Porro opera-

¹ See this JOURNAL, August number.

tion, and to amputation of the pregnant uterus as advocated by Mr. Tait. He asserted that "destruction of the life of the fetus may be necessary in other pathological conditions besides hydrocephalus; thus there may be ascites preventing delivery, or the child may be a monster." Further, those who justify craniotomy on the living fetus do not all agree as to the pelvic narrowing which forbids it and renders abdominal section imperative.

Three recent successful Cesarean operations in Philadelphia gave promise that the future American statistics of this operation would be much more favorable than they have been. In the choice of operations it was probable that the majority of women would select that which is least perilous to their lives.

He thought it evident that amputation of the pregnant uterus was destined to occupy a more prominent place than it yet had, and that a larger experience with the operation might confirm the position to which Mr. Tait had assigned it.

Closing, he said: "The future will soon answer the question as to whether hysterectomy or hysterotomy will save the larger number of patients and have a mortality more nearly that of ovariectomy; and by that answer the obstetrician will have a clearer guidance than he now has in one of the most important questions belonging to the casuistry of obstetrics."

DR. ALBERT VANDER VEER, of Albany, N. Y., then read a paper entitled

CONCEALED PREGNANCY: ITS RELATIONS TO ABDOMINAL SURGERY.

This paper is based upon the study of sixty-eight cases of abdominal section wherein pregnancy existed as an undiagnosed complication. The observation is made that the most eminent as well as the operator of few opportunities have alike made the same error relative to pregnancy. A diligent effort has been made to obtain the histories of reported cases, the library of the surgeon-general's office has been thoroughly searched, and four hundred circular letters sent to operators at home and abroad. The results of these researches are tabulated, and, although incomplete, contain all accessible literature. Abstracts of ten cases are given, including two personal cases. In all there are twenty-six cases where pregnancy existed with fibroid and no diagnosis was made. The indications for operation were dependent upon a rapid-growing abdominal tumor whose diagnosis was obscured, and the great distress of the patient. In the majority of the cases no symptoms of pregnancy are noted. Rapid growth and changes in the consistency of the tumor were observed in nearly all of the cases, yet pregnancy was not suspected by many operators. Of itself rapid growth as an evidence of pregnancy may be fallacious; it is not universal, and may be dependent upon other conditions (malignancy). Amenorrhea was noted in eleven cases, and with it mammary changes in four; but in earlier months, at least, a flow or actual flooding may con-

tinue and is most frequently the cause of abortion in cases of fibro-myoxoma. The physical signs of pregnancy, prior to the fourth month, may be either obscured or concealed by the presence of fibro-myoxoma. The use of the uterine sound was employed in nearly all of the cases, and only served to confirm the fallacious diagnosis. Again, the pregnancy may be extra-uterine or in a rudimentary horn of a bicornated uterus—other sources of difficulty. I would not have it understood that in my opinion the diagnosis of early pregnancy, *i. e.*, before the fourth month, as a complication of fibro-myoxoma, is impossible in all cases, but that the diagnosis is at the best a matter of presumption, and that it is often impossible when immediate operative interference is demanded. In only three cases did the error occur after the fifth month. There are nine abdominal sections classified where the incision revealed a pregnant uterus alone. Five cases occurred early in the history of abdominal surgery, when methods of differential diagnosis were not as well taught and practised as now. Hydremia as a complication of pregnancy led to abdominal section twice. The cases of Drs. Prince and Varian illustrate the utter unreliability and intrigue in the statements of unmarried women with abdominal enlargements, whatever be their reputations for chastity.

Pregnancy as a complication of ovarian cyst is frequently met with, and is not always diagnosed.

In twenty-eight cases collated, no symptoms are noted save in one case—amenorrhœa. When the slightest suspicion occurs from any symptom, the use of the uterine sound is positively contra-indicated, as abundant experience has shown we have no right to induce abortion before performing ovariectomy.

From the facts determined we are justified in arriving at these conclusions:

I. That from the study of the sixty-eight cases I am convinced that the errors of diagnosis are dependent, in a large proportion of the cases, upon conditions which make it absolutely impossible, when these conditions recur in other cases, to avoid the same diagnostic conclusions.

II. That it is the duty of every operator, before making an abdominal incision, to secure, either himself or by a specially qualified assistant, a fully classified, written statement of the facts which go to make up the clinical history of the case, together with the results of the physical exploration made by the operator and his consultants, using a formal blank statement (that of Sir Spencer Wells, for example), so that no facts may be omitted. That no part of this duty should be delegated, except under supervision, to internes of hospitals.

III. That the probable diagnosis should be based upon the physical signs contained in the notes, corroborated, with few exceptions (unmarried and ignorant patients), by the rational signs contained in

the clinical history, and not by simple abdominal palpation and "the dim light of a pelvic examination."

IV. That whenever the slightest probability of pregnancy exists it should be fully explained to the patient and to her friends.

V. That the necessity for operative relief and the consequences of delay or neglect should be carefully stated to the parties interested before their formal consent is obtained to the operation.

VI. That it is the duty of every operator to report fully all such cases, that the methods of diagnosis may be improved, if possible.

VII. That it is the duty of the profession at large to maintain that pregnancy may be absolutely concealed, especially prior to the fourth or fifth month, by other intra-abdominal conditions.

DR. W. H. PARISH, of Philadelphia, Pa., then read a paper on

PELVIC ABSCESS IN THE FEMALE.

He said: I use the term in its comprehensive sense, as applicable to any accumulation of pus within the pelvis. Exclusive of some abscesses common to both sexes, there are three principal varieties of pelvic abscess in the female: 1st, areolar; 2d, intratubal and ovarian; 3d, intraperitoneal.

Pelvic cellulitis was formerly deemed of frequent occurrence, and areolar abscess was thought to be the most frequent. Abdominal surgery has shown cellulitis to be only occasional, and many cases treated formerly as areolar abscesses were really within either the tube, ovary, or peritoneal cavity. Some operators seem to almost doubt the occurrence of areolar abscess. I have seen a number, some shown to be such after exploratory abdominal section. It arises in acute cellulitis, and usually follows labor or traumatism of the cervix or vagina or external genitals, and is preceded by septic infection of the lymphatics or veins. I have never seen areolar abscess arise from extension of gonorrheal inflammation through the walls of the vagina or uterus. Such abscess may follow suppuration of a pelvic gland as a result of chancroids, or it may develop from a hematoma. Chronic cellulitis exists only as a complication of fistulous tracts or other constantly acting causes. It does not occur as an independent condition. Such has been shown by the surgeon. Intratubal and ovarian abscesses often co-exist. Their frequency has been demonstrated by the abdominal surgeon, though Bernutz and Goupil long ago described them. Intratubal abscess occurs with much greater frequency than the areolar abscess. Sometimes the complications are so great that the operator cannot determine the origin without fatal dissection. Hence it is difficult to arrive at the relative frequency of areolar and tubal abscess. The term pyo-salpinx does not suggest the extent of exudate and adhesions of viscera surrounding the tube. Intratubal abscess is usually dependent on gonorrhea. The gonorrhea may have existed in the male for years, and for weeks or months in the female. The contributing causes are exposure during menstruation, venery, the sound, strong intra-uterine applications,

tents, and operation, as stretching of the cervix or the closure of a cervical laceration. In the latter case the interference with due drainage of the uterus may be the explanation. Septic inflammation is another cause of intratubal and ovarian abscess. But usually the calibre of the tube is probably increased from relaxation of the muscular tissue. After abortion the usual pelvic inflammation is salpingitis and ovaritis. Then intratubal abscess is more frequent than areolar abscess. The latter is more frequent than labor at full term. Intratubal abscess may follow the use of the sound, etc.

It is unwarrantable to await the spontaneous escape of pus. In areolar abscess drainage is the indication. Incision above the pelvis is preferred to vaginal incision, unless the mass is distinctly bulging the vagina.

The drainage should be perfect and constant by the tube and antiseptic irrigation with corrosive sublimate, one in three thousand. Aspiration is liable to cause extension and aggravation of the inflammation. After incision the finger introduced will show a fibrillated inner surface if areolar, and a smooth surface if intratubal. In the latter case collapse of the walls does not occur promptly. Vaginal incision should be preferred to a rectal incision in all cases. An incision above Poupart's ligament should be either over its inner or its outer extremity, and can be made early, keeping external to the peritoneum. Remember the iliac vessels are in the areolar tissue, and the drainage tube must not come in contact with them.

In intratubal abscess, drainage is not so safe nor can a cure be expected. Removal early after abdominal section is the only reliable procedure. Careful toilet of the peritoneum is always necessary, and usually a drainage tube. Mr. Tait, and in this country Drs. Jos. Price, Wylie, and others, have achieved results in these cases highly satisfactory. In some long-neglected and greatly complicated cases, drainage may be indicated as a palliative measure, to be followed, after local and general improvement, by removal. Sometimes, though rarely, drainage alone may cure the case. Recurrence is the rule after mere drainage. Exploratory laparotomy may be necessary to determine the location of the pus, and a second and extra-peritoneal incision will be best if in the areolar tissue. With the finger in the peritoneal cavity the proper point for opening may be ascertained. Intra-peritoneal abscess is not very common. It may follow the leakage of a gonorrheal or septic tube, or arise from septic inflammation of the lymphatics, or may be due to a foreign body, as a ligature. Laparotomy, with removal of the pus, etc., and of the exciting cause, is the usual indication. I have removed two (2) gallons of pus at one time, through a median incision, with recovery of the patient. Delay in operating permits the danger to become cumulative. Permanent fistulæ are usually the result of timidity and inefficiency on the part of the attendant, and can be prevented by early use of the knife.

DR. JOSEPH TABER JOHNSON, of Washington, D. C., read a short paper upon

TETANUS FOLLOWING OVARIOTOMY.

He gave the history of the case upon which the paper is based, and entered upon a brief discussion of the more recent theories in regard to the infectious and contagious nature of the disease.

The patient was a lady, sixty years of age, who had been a sufferer for about a year from pelvic and ovarian pains.

Had been treated for ovaritis and "pelvic cellulitis," with only temporary benefit. Was removed in October last from a hotel to Dr. Johnson's private hospital, where, as the result of a consultation, the pelvic-cellulitis theory was still further treated for two weeks, while the lady was kept absolutely quiet in bed.

Not improving, she readily agreed to his suggestion to open the abdomen and remove the offending mass, if possible. This was done about November 1st, in the presence of Drs. Lincoln, Luce, and Cuthbert. The pelvic cellulitis was all removed in the shape of a sarcomatous enlargement of the left ovary, which was thoroughly imbedded in the surrounding tissues and required tedious enucleation. It was as large as a child's head. Hot-water irrigation and a drainage tube arrested the oozing of blood. Convalescence progressed remarkably well for twelve days, wound healing by first intention; no pus about the sutures, which were all removed by the tenth day.

Patient removed to a sofa on the morning of the twelfth day. When put back in bed in the evening, she complained of stiffness and pain in the muscles of the neck and face. By the next morning there was no doubt that she had tetanus. By night her jaws were locked and she had well-marked spasms, amounting frequently to opisthotonos. She died on the fifteenth day after the operation, and the morning of the third day after tetanus developed. No other patients in his hospital then or since have been affected by this disease, and no evidence exists of the transmission of the tetanus poison to this patient. At least seventy-five surgical operations, and many of them abdominal sections, have been performed in this hospital since it was opened in February, 1888, and this is the only case of tetanus, and the only death which has occurred.

The very great rarity of tetanus following ovariectomy was referred to, there being less than a dozen recorded cases within the knowledge of the writer. The danger of carrying the tetanus bacillus was discussed, and also its transmissibility from the horse to man, and from man to man.

DR. A. REEVES JACKSON, of Chicago, read a paper on

INJURIES OF THE BLADDER DURING LAPARATOMY.

Details more or less complete were given of sixty-seven cases which had been collected by the author from various sources. Some of them had been already published, but the greater number were obtained through personal correspondence with the operators in whose practice the accident happened, and were now made known for the first time. It was well understood that the list was incomplete.

Some surgeons manifest a reluctance to make known the various mishaps which occur in their operative work, in the belief, perhaps, that a knowledge of them might injuriously affect their reputation among their colleagues. The author considered this an error of judgment. Surgeons should be honest as well as skilful, and their integrity would be quite as likely to receive recognition and appreciation as their dexterity, and certainly was of greater value.

Considering the conditions under which bladder injuries may happen during laparotomy, it was not necessarily discreditable to any surgeon to meet with them, for they might not be due to any carelessness or lack of skill on his part. In many of the cases cited, no possible degree of diligence could have averted the accident. Adhesions of the peritoneal surface of the elongated bladder to that of the anterior abdominal wall frequently could not be known in advance, and their existence was only demonstrable after the viscus had been opened. The use of the catheter as a diagnostic means was not always available, because the compression of the bladder against the pubis might prevent the introduction of the instrument beyond that point. Certainly, however, this attempt should always be made in any case of suspected difficulty, and would seem to be even a proper and unobjectionable routine method. Another useful precaution was to avoid prolonging the abdominal incision far down towards the pubic bone until the opening into the peritoneum had permitted the relations of the bladder to be ascertained.

The mortality of the cases in which the bladder had been wounded was large, namely, about thirty per cent; but this was due to the complicated and serious character of the cases in which the accident had occurred, the consequently increased length of the operation, and the greater danger from shock, rather than to the mere vesical injury. The latter, indeed, did not seem of itself to be very important as influencing the recovery of the patient. But, notwithstanding that fact, a urinary fistula added greatly to her discomfort, and, occurring under such circumstances, must be productive of chagrin and annoyance to the surgeon.

Inasmuch as the bladder is recognizable with more difficulty when empty than when full, it would be better, in cases presenting doubtful features, to commence the operation with the viscus wholly or partly distended. When its position has become known after the completion of the abdominal incision, it might be emptied by an assistant.

Treatment.—When it is known at the time of operation that the bladder has been cut or torn, the opening should be at once closed with a continuous suture of catgut or fine silk, applied so as to invert the edges of the wound and bring together the serous surfaces. A permanent catheter ought to be used during the first two days. After the expiration of that time, its constant use was usually unnecessary; and if the wound was small—less than an inch in length—the instrument might be subsequently dispensed with. If, how-

ever, the wound was large—exceeding two or three inches—the bladder ought to be artificially emptied during three or four days additional. In all cases the catheter should be used as long as the urine contained blood.

In the cases in which urine appeared through the abdominal wound subsequently to the operation, at a time and under circumstances which might make it dangerous or inexpedient to reach the seat of the vesical injury, the catheter ought to be used either continuously or at short intervals, for the purpose of lessening the amount of urine which escaped through the fistula, and thus aid in the closure of the latter. If, however, the fistulous opening showed no disposition to close after two or three months, the edges should be freshened to the depth of half an inch or more and stitched together.

In exceptional instances it might be expedient to affix the wounded edges of the bladder within those of the abdominal incision, in the manner detailed by Thomas and others; but as this plan must interfere to some extent with the subsequent contractility of the bladder, it is not to be commended as a usual practice. The suturing and "dropping" of the vesical wound is the better method.

Discussion on the Last Six Papers Together.

DR. WILLIAM H. POLK, of New York, said the views of Drs. Parish and Johnson were those of the present day. The pathology of pelvic cellulitis that had been in vogue up to within two or three years has been completely swept away. The pathology of the present was the outgrowth of surgical work and observation, reinforced by the evidence obtained from the dead-house. The subject of pelvic abscess was important, and had been well presented by Dr. Parish, with whose views he was in thorough accord, both as to pathology and treatment. In regard to the question of tetanus as presented by Dr. Johnson, he felt indebted to him for bringing his case before us, and for his exposition of the modern theory as to its probable cause.

DR. JOSEPH PRICE said that the accepted pathology of pelvic abscess was modern. Bernutz and Goupil had described, nearly thirty years ago, a pathology that is correct to-day. If, as Dr. Polk asserts, Sir James Simpson rejected it, a prominent teacher present to-day had, praised and accepted it. Dr. Price further discussed the operation for the condition, asserting that drainage through the vagina, in cases complicated by adhesions, he found no use for; abdominal drainage was always sufficient. So far as pelvic-cellulitic abscess was concerned, he had never seen but one case. He believed the condition nearly always arose from an extension of tubal and ovarian disease. He would never temporize in an attempt to treat such cases by vaginal puncture.

DR. S. C. GORDON, of Portland, Me., said this question of pelvic abscess opened a broad field for discussion. He thought this question ought to be settled, in view of the vast literature of the subject. Peasee taught that no such thing as chronic inflammation ever existed. Emmet indorses this view in his book, and then goes on throughout its pages talking about chronic pelvic cellulitis. He insisted that pus need not necessarily be the result of inflammation.

DR. J. M. BALDY, of Philadelphia, said that the pathology of pelvic inflammations as set forth by Bernutz and Goupil was as advanced as that of the most advanced of to-day, and he did not think, with Dr. Polk, that this pathological position was so generally and widely accepted by the profession at large, as was proven by the almost daily report of cases in the journals. The old idea of cellulitis was still only too prevalent. The treatment of pelvic abscess by vaginal drainage successfully must depend to a great extent on whether you believe the abscess is extra-peritoneal, in the cellular tissue, and has arisen independently of disease of appendages or not. Such an abscess might be so cured if the diagnosis could be correctly made. But, at best, such abscesses were extremely rare. If the case prove one of diseased appendages, the chances were largely in favor of there being several pockets of fluid to drain. Often these cases were complicated by small cysts, hematoceles, etc. Even granting the case could be thoroughly drained, yet there would still be remaining all the cheesy tube, the adhesions, and everything else—just such a condition, in fact, as Dr. Gordon insisted was as proper for removal as a true pyo-salpinx. Even if well drained it might again fill, as was proven by cases which discharged per vaginam time after time. Often at the time of the operation no pus was found in the tube, but that it had originally been a pus tube was proven by the abscesses found in the cellular tissue alongside of the large, cheesy tube. The treatment of puncture per vaginam or rectum, or emptying by the aspirator, was bad practice. These diseases could always be removed by abdominal section, and should be so removed. He was sorry that Dr. Parish had insisted so strongly on gonorrhea as an etiological factor to the exclusion of abortion and post-puerperal trouble. In his experience these latter were the cause far more frequently than the former.

Dr. Baldy, continuing, and referring to Dr. Vander Veer's paper, said that with more care fewer cases of pregnancy should be overlooked. When the pregnancy was complicated by large tumors, often the mistake was unavoidable; but there were many cases where there was only pelvic disease present, and of these many had been mistaken. He had himself, while driving for a train, stopped and given an opinion in a patient suffering from supposed pelvic trouble, and had advised operation. The operation a few days subsequently showed pelvic disease, but also a pregnant uterus, of three months, which emptied itself subsequently. Had sufficient care been taken in the diagnosis, this would not have happened in this case, as plenty of signs of pregnancy were found afterwards to have existed. He knew of several other such cases. All knew how rare was a soft myoma, how frequent was pregnancy, and with what persistence single and at times married women lied about their condition. If any of the signs of pregnancy could be found, it should at least put us on our guard and induce us to wait. The patient's statements should not influence us in the matter.

DR. JOSEPH HOFFMAN, of Philadelphia, insisted that inflammation is as necessary for pus as any other conditions that stand in the relation of cause and effect. He considers Dr. Gordon's position utterly untenable. As to the pathology of pelvic inflammation, Bernutz and Goupil, had they written to-day, could have been no more correct. They entirely disprove the pathology of Nonat by showing that periuterine phlegmon, as such, could not exist. Except as the rarest occurrence, anatomically it is impossible. The treatment by vaginal incision and drainage is faulty, for the reason that where

the pus pockets are multiple simple incision will not reach them. A simple report of a cure in any one case is no reason for the belief that it will be successful in others.

DR. A. P. DUDLEY, of New York, objected to grouping under one head all cases of pelvic disease. The present nomenclature is far preferable.

This discussion was here adjourned till Thursday morning.

Third day—Thursday, June 27th, 10 o'clock A.M.

DR. JOSEPH PRICE made reference to Dr. Vander Veer's paper, and reported two cases of concealed pregnancy in abdominal operations. Referring to Dr. Gordon's allusion to the difference in the number of cases of pelvic abscess seen in the country and the large cities, he said that he had found pus tubes existing all over the country—in the coal regions, in Ohio, and other parts of the country—quite as frequently as in the larger cities.

DR. GILMAN KIMBALL, of Lowell, Mass., alluding to concealed pregnancy in abdominal operations, reported two cases of his own where he was misled as to its existence, in one of which the sound had been passed beforehand without discovering pregnancy and without causing miscarriage. He also reported four (4) cases of tetanus following ovariectomy in his practice.

DR. E. W. CUSHING, of Boston, also reported two cases to add to Dr. Vander Veer's list.

DR. JOSEPH HOFFMAN said that in some cases where pregnancy was doubtful it might be necessary to operate to save life, and the question of pregnancy need not be considered. He had operated in one case where delay had been unjustifiable. There was acute peritonitis that seemed of menstrual origin, not yielding to treatment, and growing worse. Operation showed tubal inflammation with small quantities of pus; two days afterward the woman miscarried, having been six weeks advanced without any suspicion of it; recovery, though the miscarriage produced urgent symptoms.

DR. A. P. DUDLEY said that most laparatomists were able to testify that generally there is flowing from the stump of the tube on the second day after operation, and he thought that abortion after section during pregnancy was frequently caused by the blood insinuating itself between the membranes and uterine walls, thus separating them.

DR. VANDER VEER closed his part of the discussion by reading the conclusions to be found in his paper. He thought that cases often died while waiting for pregnancy to be settled. The lesson that these cases in part strongly taught was, *not to use the sound in making the diagnosis.*

DR. PARISH closed his part of the discussion by stating that another lesson taught is that the gynecologist and abdominal surgeon should also be a practical obstetrician. He disclaimed responsibility for the term pelvic abscess, but made use of it as the best-understood name for the conditions described.

DR. JOHNSON closed by remarking that he was conscious of the incompleteness of his list, and he was glad to get the other cases that had been brought to light in the discussion. He wished particularly to draw attention to the infectiousness of tetanus, and to its probable origin in many instances from animals.

DR. S. C. GORDON, of Portland, Me., reported a case of

**EXTRA-UTERINE PREGNANCY—DEATH OF FETUS AT THREE MONTHS,
PERITONITIS FOLLOWING—TEDIOUS CONVALESCENCE—OPERATION
SIX MONTHS AFTER—COMPLETE RECOVERY.**

Mrs. B., 25 years of age, married eight years. Never pregnant; no means used to prevent. Missed menstrual periods March, April, and May, 1888. Many of the rational signs of pregnancy; much more pain than usual, and in right side; increased leucorrhœa with one slight show of blood. In June (early in the month) was taken with severe pain in right inguinal region, lasting several hours and of a most excruciating character; no collapse or fainting. The next day felt soreness at lower part of abdomen. In a few days was up and attending to domestic duties, but in about a week came down with severe peritonitis, which continued for two or three weeks, leaving her feeble, anemic, and tender in the side all summer and fall of 1888, at times suffering considerable pain. In October, November, and December menstruated regularly, but with pain. In December, 1888, and January, 1889, I saw her for the first time, and found a tumor at right of uterus, about four inches in diameter, and diagnosed a "probable ectopic pregnancy." Three weeks after, operated and found a fetus in right Fallopian tube, apparently three and a half months advanced; fluid from sac and fetus absorbed; strong, firm adhesions and one desiccated clot as large as a nutmeg and similar in color. I removed the mass, and also a hemato-pyo-salpinx from the left side containing eight ounces. The patient made a rapid recovery and returned home at the end of five weeks.

The specially interesting points in this case are the severe pain at the time of rupture (which undoubtedly occurred in June), without collapse; the recovery from a severe peritonitis, and the subsequent ill health without suppuration on right side.

To me it is simply another illustration of the danger that lurks in delaying laparotomy after a diagnosis of extra-uterine pregnancy is made or can be made. While I do not believe with Dr. Hanks that "a diagnosis can be made in ninety-five per cent of cases," I do think that in many of them it can be sufficiently accurately determined to warrant making an exploratory incision and making certain the condition.

I wish also in this connection to enter my protest again, as I did in a report of a former case and at the meeting of the Gynecological Society last September at Washington, against the electrical treatment of this class of cases. If a diagnosis can be made accurately enough to warrant using an electrical current sufficient to kill the fetus, I believe it is malpractice not to at once make laparotomy and remove a foreign body which, in a majority of all cases, will sooner or later require removal, prove fatal, or seriously impair the woman's health. I think it is time that the profession put itself on record in this matter, in order that men of less experience may judge for themselves who are right.

DR. WM. H. TAYLOR, of Cincinnati, reported a case of

**SUPPOSED ECTOPIC GESTATION SUCCESSFULLY TREATED BY
GALVANISM.**

Diagnosis being such an important factor in the consideration of the case, he briefly stated the symptoms as presented by recent writers on the subject, and then reported a case recently under his care in which most of the phenomena of the condition in the second month were present. Several applications of galvanism were made within a period of two weeks. The sufferings of the woman were mitigated at once, and by the end of three months the tumor had greatly decreased in size and the woman was restored to health.

In view of the diversity of opinion as to the value of electricity in the treatment of extra-uterine pregnancy, the essayist regarded the result here as testimony in favor of this treatment.

DR. WM. M. FINDLEY, of Altoona, Pa., reported a case of

**TUBAL PREGNANCY—DELIVERY AT SIX MONTHS "PER VIAS
NATURALES"—RECOVERY.**

Mrs. Annie S., married, æt. 28; mother of two children, born, without complications or accidents, at term; first experienced the characteristic pains of tubal pregnancy, sharp, short, twisting, and nagging, with tendency to syncope, during the months of November and December, 1897, and until February 14th, 1898, when she was seen with her physician. Tumor in right iliac fossa, uterus elongated, os not much changed. Expectancy practised, although the fetal head could be made out in the vagina to the right, with the body as a roll along the right side of the uterus, and blending with the body of the same, near the fundus, at the umbilicus. Nine days after, labor came on, and a fetus of about six months was extruded; the labor being prolonged, and the secundines being very tardily thrown off. The waters had broken three days prior, when a thorough exploration of the uterus for six inches with a sound revealed it empty, elongated, and flattened. Recovery was complete, but extended over several months.

DR. J. M. BALDY went farther than Dr. Gordon as to the time to operate in these cases; where Dr. G. would wait for a diagnosis, Dr. B. would not. He would not because he did not think it always possible to make the diagnosis. He had often seen the diagnosis made and the operation reveal anything but an extra-uterine pregnancy; on the other hand, he had often seen operations for something else and an extra-uterine pregnancy found. Again, he had seen the correct diagnosis made and proven by the specimen. With this element of doubt it was unsafe to depend on a diagnosis or to wait for one. If a pelvic mass were found which created symptoms sufficiently grave to be a menace to life, then we had enough to operate on, and it should be done at once. The treatment of these cases by electricity depended entirely on the diagnosis, and the men who claimed most in this respect had all failed. A prominent New York surgeon had reported a large number of these cases treated and cured by electricity; these cases were quoted all over the country as authority, and were being continually brought triumphantly forth

as proof of the electrical position. Any one reading the reports of these cases will soon become convinced that in very few of them is there proven what is claimed for them. In many of them the attending physician differed absolutely as to the diagnosis, and he had a personal letter from one of the attendants assuring him that in one of them the diagnosis was not made until after the treatment was all over, and there was to his mind not the slightest proof that such was the condition. The published records themselves prove about the same thing. He believed that at times electricity would kill the fetus, but after it was killed what then? The electricians, even Thomas, advise an operation and removal of the remnants. And what are these remnants? Just exactly such a condition of affairs in the pelvis as almost every one present had been advocating the removal of, in the discussion following Dr. Parish's paper on pelvic inflammatory troubles. Not only was the woman's life endangered by this mass as it was, but it often took on suppuration and either was emptied by a tedious process or else killed the woman. The only proper and safe procedure was immediate operation and clean removal, and thus save the life of the patient and prevent the possibility of subsequent and grave trouble. Electricity in this trouble is worse than folly.

DR. PRICE did not doubt that in these days, when women resorted so freely to the gynecologist for the slightest trouble, a diagnosis might be guessed at and made. If it were possible to watch the whole progress of a case, diagnosis would be more likely to be made, though even then the policy of waiting for absolute confirmation is dangerous. He had operated for supposed extra-uterine pregnancy, and found other conditions present when the history appeared to be clear. On the other hand, he had operated or assisted where extra-uterine pregnancy had been found when it had scarcely been considered. Operation he believed to be *the method*; he had no place for electricity, because his results by actual interference with the knife had been so good that even the boasted results of electrical treatment at their best were no better, and were superior in that they left no pelvic mass for future complications.

DR. A. F. CURRIER, of New York, believed that the diagnosis had been positively made as proven by Thomas' reported cases. He believed, however, that the day was coming when electricity would not be used where extra-uterine pregnancy was positively diagnosed.

DR. HOFFMAN said that Thomas' reported cases, if they proved anything, showed that an early diagnosis of extra-uterine pregnancy had *not* been made. In several of the cases where the symptoms were seemingly plainest, there was expressed doubt as to the correctness of the diagnosis. In others there was a disagreement between the authorities consulted. In still others the diagnosis, if made, had only been made after the occurrence, once or twice, of collapse. Now, the argument of the electricians is that after rupture electricity is not to be used because inefficacious. The use, then, of electricity shows only that they have contradicted themselves in its application, or that the condition for which they applied it did not exist. Repeated collapse could only come either from leakage or rupture; simple pain could not cause the alarming symptoms present in these cases. Bernutz and Goupil speak of an ensemble of symptoms pointing to extra-uterine pregnancy and justifying suspicion of its presence. Their decisive point, however, is rupture and collapse. This is the keystone of the arch.

DR. GORDON, in closing the discussion, said: I am very glad to find so many members of the Section in accord with me on the treatment of this condition. I think the time has now come when the profession should be in accord on this matter. If it be true, as Dr. Hanks, of New York, said at the meeting of the American Gynecological Society last September, "that ninety-five per cent of cases can be diagnosticated before rupture," it seems to me that in anything short of clearing the pelvic cavity from a foreign body which at any moment is liable to rupture and prove fatal, or, if killed by electricity, still remains a foreign body, causing lingering illness, with possibly final death, the treatment by electricity is evidently bad practice. In my own case, the patient, although not dying at time of rupture, yet was a great sufferer from pain and debility until I operated. Then she at once recovered. The treatment by electricity, while it is termed surgical, is in no sense good surgery. If it be claimed by its advocates that we are not and cannot be always sure of our diagnosis, I answer that we are as sure as they are, and if there be symptoms pointing to the pelvis which materially affect the woman's health, we are justified in opening to find out the condition.

I have known rupture to take place after a diagnosis was made and before the operation could be done, even when determined upon. I am glad to hear Dr. Currier, of New York, speak so strongly in favor of laparotomy. I know that Dr. Janvrin is equally positive that this is the proper course, and I trust they may prove a leaven to the lump in that medical centre. It will always be a question of diagnosis, but I am sure that a more careful observation, with larger experience, will enable us to clear up many points that are now obscure, and then I think our course should be plain.

DR. A. B. CARPENTER, Cleveland, Ohio, read a paper entitled

ALEXANDER'S OPERATION, WITH A NEW METHOD FOR SECURING THE ROUND LIGAMENTS.

He said: It is my purpose, in appearing before the members of this Section, to speak briefly regarding the Alexander operation, with special reference to its application to complete prolapsus.

You are all familiar with the claims of Dr. Alexander and also with the writings of Mundé and others on the subject; therefore it would be only a waste of time to enter into detail in describing the various steps of the operation, but I will confine myself principally to a few remarks regarding the fastening of the round ligaments.

As a radical cure for this most distressing condition I believe the Alexander operation has no equal, because of the simplicity of the work and the comparative, yes, almost absolute, freedom from mortality. It is true there have been deaths recorded as resulting directly from the operation, yet this occurred in the early time before the detail was well understood.

The greatest objection raised in the past against this method has been the difficulty in finding the round ligaments. This, however, applied chiefly to the operations for retroversion and retroflexion, where the ligaments were small and very fragile, breaking while being drawn out, causing the operation to be abandoned as incom-

plete, and the surgeon to bear the blame of his work being a failure.

In cases of complete prolapsus it is entirely different; the ligaments have become thickened and greatly enlarged, and the difficulty in finding them in most cases is entirely removed. The many years of constant dragging upon the ligaments have usually resulted in a hypertrophied condition; instead of being small and fragile, we find them of much greater proportions, so that by first replacing the uterus and then having it held well up by a sound in its cavity, the ligaments can be carefully drawn out with little or no danger of their breaking.

In 1885, I had the pleasure of listening to a paper by Dr. Alexander himself, read before the British Gynecological Society, wherein he describes his method of shortening the round ligaments, and I was particularly impressed with what seemed to me to be the insecurity of the fastenings.

If we turn to our anatomy for a moment and consider the structures involved, the dense, unyielding fibres of the pillars of the external abdominal ring, and at the same time the round, smooth character of the ligaments, composed as they are of dense fibrous tissue, thus affording a limited opportunity for the formation of strong adhesions in the wound, it seems to me that a reasonable explanation can be found why many of the cases that have been operated upon have reported themselves in after-months as not improved, the anchorage being so slight and frail that the uterus, by continually dragging, tears the ligaments loose and gradually settles down to its old position. This, at least, was the explanation made to myself, and I accordingly determined to try a different method of fixation.

The plan which I now employ is as follows: The uterus being replaced and held high up by an assistant, the incisions are made and ligaments on either side drawn out until the uterus is found to be well up and forward. A needle armed with silver wire No. 26 is then passed through the external pillar of the ring, through the round ligament, then through the internal ring; this is then twisted down firmly, cut off, and the ends bent over and crushed down, that they may cause no irritation. The slack of the ligaments is then cut off, leaving just sufficient to fill the bottom of the wound. The ligaments are then split to within a short distance of the silver wire and turned partly outward from each other, and stitched with fine gut to the lateral walls of the wound, the latter being then closed, a small drainage tube inserted, and the whole covered by an antiseptic dressing; the silver wire left to become permanently encysted and thus hold the ligaments firmly in place.

A high posterior plastic operation should then be made on the vagina, and upon the removal of the sutures from the latter operation a Hodge, or perhaps, what is better, an Albert Smith pessary with a high bar should be introduced and worn for not less than six months.

A case of complete procedentia of years' standing, operated on by

this method ten months ago, is to-day perfectly well; and with the patient in a standing position the cervix can only be reached by the full-length index finger.

In conclusion, therefore, I will say that this method of fastening the round ligaments is in my opinion superior to any method with which I am acquainted, as it affords a firm anchorage and thus prevents the uterus from dragging upon the ligaments and drawing them gradually out, defeating entirely the object of the operation.

Thursday Afternoon Session, 2:30 o'clock.

DR. AUGUSTUS P. CLARKE, of Cambridge, Mass., then read a paper entitled

CHRONIC CYSTITIS IN THE FEMALE.

Of the various diseases the gynecologist is called upon to treat, but few have oftener proved more vexatious or intractable than chronic cystitis. After a careful study of the pathology and histology of this peculiar condition, several factors appear to comprise to a greater or less extent the etiology. The lesions or morbid processes giving rise to cystitis, whether in the acute or chronic stage, are numerous.

Each case should be considered according to its own history and peculiar indications. In the consideration of the subject of cystitis, it is well to keep in mind the structure and anatomical relations of the mucous membrane of the bladder. Reference to the character and arrangement of the epithelial cells shows that there are several layers. The deeper layers are composed of cells that are conical or cylindrical in appearance. The superficial layer of the mucous membrane is provided with a squamous epithelium. The same arrangement is continuous with the structure of the urethra. This epithelial structure of the mucous membrane extends to the urethra, where numerous racemose mucous glands—the glands of Littre—have ducts opening on its surface. The muscular coat of the urethra is formed of two layers and is continuous with that of the bladder. This arrangement of parts gives the urethra and ostium vesicæ not only a remarkable power for distensibility, but also a wonderful immunity against ordinary accidents and conditions that occur to the viscus itself. In the treatment of cystitis this fact should be considered, and the point emphasized that the symptoms present in a case of chronic cystitis are often but a mere expression of the organ that there has occurred a lesion or a morbid process, and possibly at a distance from the part seemingly affected. A case of cystitis in which a marked antelexion existed, occurring in a patient four months advanced in pregnancy and suffering from nausea and morning sickness, was relieved after the uterus had been restored and maintained in position by vaginal tampons and other mechanical support. The importance of fibrous adhesions or cicatricial bands in prolonging an attack of cystitis occurred in the case of Mrs. D. There was a history of pelvic inflammation from which she had recovered, but a cystitis remained that was a constant source of trouble.

A strong fibrous band, connecting the posterior lip of the cervix to the vaginal wall below, firmly held the uterus and dragged upon the bladder. After the band was divided, the uterus and bladder were restored without further vesical trouble. Vascular growths within the meatus urinarius often give rise to very distressing symptoms of cystitis, as do also diseases and injuries of the ovaries. Anal and rectal inflammations are not uncommon causes of cystitis. Sometimes urethritis accompanied by cystitis arises from a contracted or a hypertrophied condition of the meatus. In such cases micturition is usually accompanied by more or less tenesmus. This condition of the parts may continue for years and cause a vast deal of suffering. In the treatment, rapid dilatation of the urethra will often afford the most satisfactory results. A resort to rapid dilatation will be found to be most beneficial in cases in which tenesmus is a leading feature, and in which the parts around have been contracted and hypertrophied. There are, however, cases of vesical catarrh in which the walls of the bladder have become so changed and hypertrophied, and the tenesmus so marked a feature, that rapid dilatation, even when supplemented by the aid of irrigation carried out with the most improved means at hand, utterly fails to afford relief. In such cases, Emmet's operation for artificial vesico-vaginal fistula is not only justifiable but imperatively demanded. Of course, the difficulties attending the subsequent closure of an artificial fistula must not be overlooked. Sometimes cases of cystitis that are apparently quite severe readily yield to the milder means of treatment. Faradism, with one pole near the urethra and the other over the bladder, gives speedy relief. Saline laxatives and mineral waters are of great benefit in the treatment. A douche of corrosive sublimate, 1 in 2,000, will often prove beneficial in cases in which no marked organic changes have occurred, and in which the troublesome symptoms are due to septic ferments and to uncleanness generally. No general rule or special course of treatment can be laid down that is applicable alike in all cases. Suffice it to say that each case as it occurs must be studied and treated according to the peculiar indications.

The medical attendant should recognize the fact that some cases of chronic cystitis, apparently very formidable, as already stated, will readily yield to the simple and mild methods of treatment employed, while others may occur that will defy all recognized methods of treatment, and can be cured or corrected only after the most skilful and ingenious operations have been resorted to.

DR. JOSEPH HOFFMAN, of Philadelphia, Pa., then read a paper entitled

CRANIOTOMY AND ITS INDICATIONS.

He said the purpose of his paper was not to enter into craniotomy in all its phases, but rather to inquire into and determine what place craniotomy as an obstetric procedure, by its own merits or failures or faults, is entitled to hold. Tyler Smith's plea for the abolition of craniotomy very well illustrates why reform was necessary in the

then accepted indications for this operation. Among the indications were found the following: Arm or shoulder presentations; convulsions; rupture of the uterus; bands or cicatrices in the vagina; rigidity or occlusion of the os uteri; swelling of the vulva and vagina; rigidity of the perineum; disease of the heart or lungs; distention of the mother's bladder.

Certain it is that less harm could result from its abolishment than from its performance for a series of indications born only of the rashness of the operator. Craniotomy has for its object the safety of the mother by the mutilation of the child, always when dead, and we believe, under certain conditions, when living. It is criminal to endanger the life of the mother after the death of the child, when fetal malposition, pelvic deformity, or any other cause renders delivery dangerous. The argument when the child is living is not so simple. It resolves itself, first, into the question of craniotomy for fetal deformity; second, for pelvic deformity under certain conditions to be specified. Where there is undoubted fetal deformity, especially hydrocephalus, spina bifida, or in the case of monstrosities, the practice that would insist upon Cesarean section and condemn craniotomy is more sentimental than surgical.

Many of our recent writers apparently desire to condemn it in all cases whatsoever upon the living fetus without exception. As a type of these may be taken the views of Dr. Busey in the *AMERICAN JOURNAL OF OBSTETRICS*, January, 1889. These writers, of whom Dr. Busey may be taken as a type, fail to appreciate the fact that we need go back no further than Hodge to find that in cases where the short diameter of the pelvis is two inches or under, the Cesarean operation is to be preferred, as affording a better prospect for the mother while having the strong recommendation of affording a good prospect of safety to the child; this, too, before the improved Cesarean operation was devised. These writers seem, too, to fail to appreciate that as long ago as the writer referred to, to go no further back, the early performance of the Cesarean section was specifically stated as justifying strong hopes for "the salvation of both mother and child." It is not possible to avoid the observation that those writers who unhesitatingly apply the statistical method of arriving at conclusions in favor of Cesarean section seemingly forget that the dangers of craniotomy lie almost entirely within the limits already admitted into the domain of legitimate Cesarean section, and that outside of these cases the danger to the mother is almost absolutely nothing, as admitted by Lusk in his late discussion. They seem, too, to consider that craniotomy, to be successful, must be done by the expert, and that the Cesarean section is the safer, no matter by whom performed. To this we submit a positive disagreement, though even Mr. Tait has gone so far as to say, in effect, that the removal of the pregnant uterus is a simple operation.

The point to be here considered is whether the decrimal of the abuse of any operation necessarily implies that there is never any requirement or justification of such operation. We think not. No one

will dispute that where there is more danger to the mother in the performance of craniotomy, the conservative operation of Cesarean section should be performed. On the other hand, where there is no danger to the mother whatever, I consider it questionable whether any obstetrician here present would subject his own wife to the danger of a capital operation in order to save the life of the child.

Early operation is confessedly the great requirement for the success of the Cesarean section. If early operation is not possible owing to antecedent delay, apart from the dangers of a contracted pelvis, the relative condition depending upon the skill of the operator, craniotomy as an alternative for the section must be considered, and that operation selected which offers the best prospect of safety to the mother. It must be considered in such selection that protracted labor is a powerful factor in decreasing the living chance of the fetus. It is to be remembered also that the simple fact that the child *may* be born alive is not sufficient justification for any operation that does not give to it approximately the same living chance that natural birth possesses. The argument then holds that that operation which gives the infant a diminished living chance is not to be selected that also gives the mother a diminished living chance. The selection, then, is rather one of the nature of a determination by logic and the law of chances than by sentiment or dogmatism.

Dr. Busey argues, in his first paper, that the child has been born while the operator was awaiting the arrival of his instruments, as if such facts can entirely condemn the operation. By such reasoning any surgical procedure could be condemned. The writer has delivered by the premature induction of labor, without instruments, a woman on whom an anxious operator had decided that section was necessary. A second case came under his knowledge in which the woman was in her third pregnancy. Her first child died after thirty hours' labor. In her second pregnancy she was delivered of a living child without instruments; child still living. In her third pregnancy she was seen before term and Cesarean operation decided upon. She recovered after a protracted illness, the baby making a narrow escape at birth, being very small. This case has had only a skeleton report, in great part absolutely false, was simply a bid for notoriety, and is a reproach to legitimate surgery. To condemn craniotomy from the standpoint of these cases would be illogical and unfair, yet not more so than the false logic of Dr. Busey quoted above.

The writer purposely avoided the introduction of figures and citation of authorities, endeavoring to bring out points profitable for discussion.

DR. A. P. CLARKE, of Cambridge, agreed with the writer that some occasions would arise where craniotomy would be unavoidable in the interests of the mother.

DR. PARISH, of Philadelphia, made an eloquent plea for Cesarean section, where possible to perform it early, condemning strongly the views and performances of the gentleman who opened the discussion (not handed in), who related that he had done forty (40) crani-

otomies. Dr. Parish did not doubt that certain contingencies might arise in which craniotomy would be indicated.

DR. A. F. CURRIER, of New York, regretted that the writer had not made known more clearly the conditions under which he would perform craniotomy.

The Chairman, DR. WATHEN, earnestly protested against the position taken and practice advocated by the gentleman who opened the discussion. He believed that any man in ordinary practice who had performed the operation forty times must have done it unnecessarily. He had never yet performed craniotomy upon a viable child, and never would do so.

DR. HOFFMAN, in closing, said he was grateful to both Drs. Parish and Wathen for their expression of opinion. His paper was in no sense a plea for craniotomy, and he did not wish it to be so considered. As to the indications for the operation, they were stated in the paper. He believed some legal restraint should be put on the useless performance of craniotomy. Turning is an operation not free from danger, and in his only fatal case death had occurred from rupture of the uterus; the size of the head prevented birth of the child.

The following are abstracts of papers presented but not read:

A NEW TWO-WAY CATHETER FOR UTERINE INJECTION,

by DR. A. CORDES, of Geneva, Switzerland.

Finding the instruments for this purpose unsatisfactory on various accounts, principally because they were not easily made aseptic, Dr. Cordes had made in Paris a catheter consisting of two pieces, one sliding into the other, so as to be separable in two grooves looking at one another by their concavities, and being easily cleaned with a brush. The blind end near the eyes is filled up to their level with metal, so as to leave no corner or uneven space in which microbes could lodge. These grooves are converted into tubes by the introduction of a sound in a sheath of soft rubber, which adheres sufficiently to the sides of the grooves to make the instrument watertight. Being open at the distal end, it throws the water against the fundus uteri, whence it returns by the exit channel. It may be made of any material preferred, but the author recommended hard rubber as being light and inexpensive.

Dr. Cordes then gave a criticism on the various two-way injection tubes in the market, and thought the one he had devised overcame many of the objections pertaining to the others. Drawings of the instrument accompanied the paper.

THE TREATMENT OF LACERATION OF THE CERVIX BY THE OBSTETRICIAN,

by HENRY C. COE, M.D., M.R.C.S., of New York.

It is common to hear patients abuse the accoucheur for lesions resulting from parturition, for the cure of which they are obliged to consult the gynecologist. The gynecologist himself is not always prompt to defend his *confrère*. Perhaps it is because in many instances he cannot conscientiously do so. It is not the purpose of this paper to enter into a discussion of the question of actually preventing

serious lesions of the genital tract by proper attention during parturition. There is great difference of opinion as to the percentage of lacerated cervixes in which the tear might have been prevented. Of course the prophylaxis can usually be observed only where the accoucheur himself performs some manipulation within the os. In such cases, as well as in rapid labors and occipito-posterior positions, we should be on the lookout for laceration of the cervix, and be ready to treat it when it occurs. The tendency of scientific obstetricians now is to leave the genital tract as far as possible alone after parturition, on the same principle that the surgeon relies upon his antiseptic details during the operation and does not disturb the dressing as long as there is no rise of temperature. We may go to the other extreme. The "antiseptic pad" of Garrigues had led to abuses in the way of non-interference where local examination and treatment were urgently indicated. In our anxiety to avoid "meddlesome midwifery," we may make too light of lesions that are really serious. The accoucheur should never, in his exultation at having successfully terminated a difficult case of labor, lose sight of the fact that while the patient may forget that he saved her life, she can never forget or forgive his making light of a laceration of the cervix or perineum, for which she must undergo a subsequent operation. Whenever we have reason to suspect that a laceration of the cervix has occurred, we should look for it and treat the case accordingly. The treatment may be immediate or secondary.

1. *Immediate.*—In a small number of cases (version or instrumental delivery) the cervix is so deeply torn that the hemorrhage from the circular artery is sufficiently dangerous to threaten. Here prompt action is necessary. One or two deep wire sutures should be introduced. The practice of introducing tampons, giving astringent injections, etc., under these circumstances is to be condemned. Follow the ordinary surgical rule—to ligate the severed artery.

2. *Secondary (or subsequent) Treatment.*—Do not attempt to repair the laceration by sutures, either at the time the laceration occurs or during the puerperal month. Wait until involution has proceeded—at least three months. Rely on perfect cleanliness, antiseptic vaginal injections, and iodoform suppositories. Local applications to the torn cervix during the puerperal month are reprehensible. Keep the patient in bed longer than usual. Be on the watch for septic infection, especially the insidious form of parametritis. When the patient goes about, support the uterus with a pessary if it remains large and tends to sag downward.

As a result of this treatment, many cases of extensive lacerations of the cervix heal during the puerperium. References to author's experience in private and hospital practice. Dr. Emmet's views.

Conclusion.—We are still far from realizing the scope of preventive medicine. No reason why such a large proportion of female ills should originate from what we denominate a "physiological process." Nature is kind, but we sometimes trust her too much. It should be

the aim of the obstetrician to forestall the gynecologist. Allusion has been made to only one puerperal lesion, but how many more serious troubles (salpingitis and oöphoritis) might be avoided by greater care of the woman during and after labor? The subject is not a new one, and the author merely seeks to reawaken interest in it. The general practitioner should feel his responsibility more. It should be his aim to look beyond immediate results to those more remote. His present triumphs should not be bought at the expense of future and well-merited blame.

DR. GEO. APOSTOLI, of Paris, sent a paper on the

ELECTRICAL TREATMENT OF SALPINGO-OVARITIS.

1. My electrical treatment of salpingo-ovaritis reaches back to the year 1882, and has been heretofore described under the name of treatment of perimetritis.

2. It comprises three methods of application, which, mentioned in the order of their increasing efficacy, are: the faradic current of tension, the simple galvanic intra-uterine application, and the vaginal galvano-puncture.

3. Every electrical treatment ought always to be rigorously preceded and followed by an antiseptic vaginal irrigation (of sublimate, carbolic acid, creolin, or naphthol). It will be besides most advantageous to keep the vagina closed between the treatments with gauze saturated with iodoform, sublimate, or salol, for the purpose of maintaining perfect antisepsis and to prevent as far as possible all sexual relations.

4. Confinement to bed, not obligatory in the light forms, will always aid the efficacy of the treatment. A rest of from one to several hours will be obligatory after every galvano-cauterization, and especially after every galvano-puncture.

5. Of the two localizations of the faradic current which I advise—the vaginal and uterine—the uterine, with the aid of a bipolar sound, is the more efficient.

6. The faradic current of tension is only tolerable and indicated in the acute and subacute forms, and the faradic current of quantity, which is less efficient and less tolerable, ought to be excluded, except in certain rare chronic cases which are very old, in which it will be able to render some service.

7. The faradic current of tension is an excellent and rapid sedative, which calms the acute condition, diminishes the pain and nervous excitability, but remains powerless against the development of the inflammatory process.

8. The current of quantity will be able in certain chronic forms to aid in the absorption of the exudates by stimulating the interstitial circulation.

9. Faradization ought here always to be applied in moderate doses, without shock, and with a gentleness which increases in proportion as the condition is more acute.

10. The faradic treatments ought from the beginning generally to last from five to fifteen minutes daily, with a dose which increases gradually, and which ought not generally to pass the limit of individual tolerance.

11. Intra-uterine galvanization, or, more properly, chemical galvano-cauterization, will often succeed in itself in curing certain catarrhal salpingo-ovarites. It constitutes an excellent method of progressive and total destruction of the uterine mucous membrane, which is always diseased in these cases; of rendering healthy the uterine cavity; and of peripheric derivation.

12. It presents the following advantages over the use of the curette :

It is absolutely harmless;

It can be localized in the whole or part of the uterine cavity;

It is progressive, not violent, and never instantaneous;

It is mathematically dosable, and thus acts as may be desired;

It is acid or alkaline at will;

It is generally tolerable and requires no anesthetic;

It is easy of application and does not necessitate an assistant;

It does not condemn the patient to a forced confinement to bed;

It is not contra-indicated by any acute condition;

It unites to a local superficial action a trophic, general antiseptic, and interpolar action.

13. The positive pole always causes less congestion than the negative, which latter brings about resolution more rapidly; therefore the positive pole should generally be applied in the beginning, to give place later to the negative pole.

14. Every galvano-cauterization ought to be given in a small dose at first, gently, in order to test the uterine, and especially the peri-uterine, susceptibility. The intensity will increase afterwards with the tolerance of the patient and the clinical indications; beginning with twenty to forty milliamperes, it will reach progressively the figure of one hundred to one hundred and fifty.

15. The treatments will take place once or twice a week, and the duration of each will vary from three to eight minutes, according to the circumstances.

16. Every salpingo-ovaritis which is not rapidly modified by the intra-uterine galvano-cauterization ought to be treated by the vaginal galvano-puncture.

17. The efficacy of the galvano-punctures is generally much greater than that of the galvano-cauterizations, as the patients affirm and as my daily experience proves.

18. Every galvano-puncture ought to be conformed scrupulously to the following general rules:

To use a very small and sharp steel trocar;

Never to bury it deeper than one centimetre at most.

To avoid the anterior cul-de-sac, and to make the puncture behind or at the sides upon the point of the inflammatory tumor which is most prominent in the vagina.

Anesthesia will be often necessary in galvano-punctures of high doses.

To avoid the use of the speculum and to plunge the trocar through a long, isolating cylinder of celluloid, after having previously explored the region with the index finger in order to avoid any arterial pulsations.

One or two weeks will intervene between the treatments by the galvano-puncture, and they should not generally be repeated until the reaction from the preceding has entirely disappeared.

The indication for the galvano-punctures should be reserved for those cases alone in which the uterine appendages are near the vaginal wall.

The average intensity of each sitting should vary between fifty and two hundred and fifty milliamperes, and their respective duration should be from five to eight minutes.

19. The positive puncture will be generally indicated in the beginning, as less dangerous and causing less congestion than the negative, and in order to establish, if possible, the adhesions between the uterine appendages and the vaginal wall. The negative puncture, which generally produces more resolution in high doses, will aid in creating a vaginal fistula from the tumor in case of pyo-salpingitis.

20. Almost every salpingo-ovaritis will be amenable to an appropriate electrical treatment, which will be, before all, the conservative method of choice, sovereign in most catarrhal salpingo-ovaritis, calming only in the tuberculous salpingo-ovaritis, and capable of curing certain purulent salpingo-ovaritis, thanks to the establishment of a vaginal drainage.

21. All electrical treatment followed by an intense or prolonged febrile reaction should be immediately suspended, or at least very much lessened; and this will fix sometimes the diagnosis of pyo-salpingitis, which will only be amenable to the galvano-puncture when it projects sufficiently into the vagina to permit of evacuation with safety.

22. Every course of electrical treatment, whatever may be its duration, ought not to cease until the patient declares herself symptomatically cured, and until examination shows a considerable anatomical resolution.

23. All salpingo-ovarites will come under the jurisdiction of surgery, only when all the preceding electrical methods, applied for a sufficiently long time, have been exhausted with complete failure.

24. Castration, which irretrievably mutilates women, both physically and morally, which kills them sometimes, and which only cures definitely and permanently in about a fourth or fifth of the cases, ought to be an operation of necessity, never of choice, and considered as the last resource of therapeutics for the uterine appendages.

25. The electrical therapeutics which I advise, which is conservative, inoffensive, easy of application by every one, and which does

not pretend to produce a constant and radical cure of salpingo-ovaritis, finds its best justification in this fact, that a *subsequent normal pregnancy* is possible, as I have seen in several of my patients.

THE USE OF GLYCOBORON IN GYNECOLOGY.

W. THORNTON PARKER, M.D. (Munich), Narraganset Pier, R. I. —The use of glycoboron, or boroglyceride, has been so repeatedly brought to the notice of the medical profession that it may seem unreasonable to occupy your time with any further reference to this valuable antiseptic for surgical and gynecological uses.

As early as 1882, after my return from the Charing Cross Hospital, I endeavored to lend my aid in bringing glycoboron to the favorable notice of the surgeons of this country.

Whatever may be the opinion of medical men as to its value in surgery, it certainly possesses valuable properties when used in gynecology. Glycoboron, or boroglyceride, is, as its name would imply, a combination of glycerin, boracic acid, etc. It is not, however, a mere mixture of these two preparations, so well and so favorably known, but it is a definite chemical composition produced by scientific manipulation. A hydrate is formed by a large quantity of water. Some formulæ which are obtainable in almost every drug-store pretend to be able to produce glycoboron, but such easily made preparations are not reliable, and have proved useless where the genuine is so successful. Its properties are increased when combined with glycerin, and the perfection is attained in the compound known as glycoboron. Without referring to the many uses in surgery for which this preparation has already proved its great value, we can readily understand how useful glycoboron may be in gynecological practice.

In solution, for injection in diseases of the bladder, rectum, vagina, and uterus; with Tiemann & Co.'s excellent syringe for the three first-mentioned organs, and for the uterus it can be conveniently used in Tiemann & Co.'s intra-uterine measuring and injecting tube.

For chronic leucorrhœa, vaginitis, etc., it is best employed in the form of large gelatin suppositories. Mr. Powel, of Messrs. Caswell, Massey & Co., has made for me some suppositories which to my mind are unequalled by any made in this or any other country. The small cacao-butter suppositories so commonly in use are almost worthless, if not positively injurious. I have here some of the glycoboron suppositories to show you, and I think you will readily allow that nothing better of the kind has yet appeared for medical uses. These, you will notice, are large and yet well made, easily introduced, and rapidly melting; they are the most cleansing application for diseased vaginal structure which it has ever been my good fortune to find. The vagina must first be thoroughly cleansed with copious injections of hot water before the suppositories are used; at least the best results are only obtained when this is attended to.

Besides the suppositories, Mr. Powel has made for me these tablets. You will notice that they are about as large as a silver "quarter-dollar," but very much thicker. These are used for ulcerated cervix, and are kept in place by a well-fitted plug or pessary of oakum (tarred jute). The oakum pessary I have already described in medical journals, and have found it very kindly received and giving good results.

Where the tablets cannot be obtained, the oakum pessary can be spread with unguentum glycoboron in various proportions as to strength.

For the intra-uterine injection, the measuring and injecting tube already referred to will be found safe and convenient. The cleanliness and gentleness of glycoboron, and the steady improvement almost always resulting, should be sufficient proof of its superiority to the commoner and cheaper forms of useless cacao-butter suppositories so generally in use.

No preparation with which I am familiar at all equals glycoboron in its healing and cleansing properties, especially in gynecology.

The vagina can be readily cleansed after menstruation by using these suppositories. Catarrhal troubles of the vagina and uterus give way before the healing results of this comparatively new antiseptic.

Pencils of glycoboron have been made for intra-uterine use when injections are contra-indicated.

Not long ago some articles appeared in the *New York Medical Record* discussing the best vaginal tampon. I believe that fair experiment will demonstrate that the oakum or tarred-jute pessaries, more or less saturated with unguentum glycoboron, are superior to any others either as pessary or tampon, and that for vaginal applications in any of the diseases of vagina or rectum nothing can equal a reliable and easily applicable preparation of glycoboron.

I require the patient to use a vaginal injection of hot water just before going to bed. I recommend the use of Tiemann's vaginal syringe, on account of its safety and the copious amount of water it is capable of throwing into the vagina at each compression of the large bulb. The tubes are valuable on account of their large size and many apertures, and, being made of pliable rubber, are not so injurious to the patient as the tubes generally in use.

After injecting the hot water, the suppository of glycoboron is to be introduced.

A napkin should be worn to prevent soiling the bed linen from the melting of the suppository.

"This syringe is made entirely of rubber, and the vaginal and rectal tubes are perfectly flexible. There is no terminal orifice, but the sides are perforated with 'velvet eyes' for a distance of nearly two inches from the end. These rubber syringe points do not lacerate the mucous membrane, nor produce the injury so often caused by the hard metallic tubes. The bulb and tubes are large, and insure a copious supply of water."

- The injection is best taken in the recumbent position in bed, and this has been made possible by the invention.

The action of the glycoboron continues during the night, and in the morning the vaginal injection may or may not be repeated, according to the direction of the attending physician.

Severe cases of vaginitis often yield after the use of a dozen of these suppositories, one being inserted night and morning after copious injections of hot water.

The preparations of tannin, oak bark, alum, lead, "bichloride," etc., I never use, having found that where any aid can be derived from local treatment glycoboron will give the best results if properly attended to in the details I have mentioned. Certainly this treatment is worth a trial for those who are not already familiar with it.

DR. E. E. MONTGOMERY, of Philadelphia, sent a paper on

THE INDICATIONS FOR, AND LIMITATIONS OF, THE OPERATION FOR
THE REMOVAL OF THE APPENDAGES,

in which he urged the importance of their more accurate determination. The operation was introduced on three lines of indications:

1. To bring about the menopause in what are known as the neuroses.

2. For the relief of symptoms due to pathological changes in the tubes and ovaries.

3. To establish the menopause in grave and threatening disease in the uterus.

The aims of the operation as here expressed are legitimate when the indications are correctly interpreted. The indications may be divided into physiological and pathological, the former comprising operations done to establish the menopause, without reference to the pathological conditions present; the latter, primarily, for the removal of diseased organs, and may be partial or complete.

The operation is justifiable in mania and epilepsy, when they can be closely associated in origin or subsequent occurrence with the menstrual function. It affords no relief in nymphomania, as the ovaries do not govern the sexual appetite nor the power to gratify it. In hysteria it should be a dernier resort, and then performed only after the patient has been fully informed of the influence it is likely to exert upon her future life. Its value in uterine myomata cannot be questioned, but the exceptional cases in which the flow is not arrested make it advisable, when feasible, to do a vaginal hysterectomy.

Suppurative inflammation of ovary or tube is a positive and imperative indication. The frequency of this, with peri- and parametritis, make it good practice to advise exploratory incision with a view to removal of the offending organs in recurring attacks of either of the latter diseases.

Chronic inflammation of the tubes and ovaries is not necessarily an indication for operation. Polk and Imlach have done good work

by demonstrating that many cases can be restored to health by separating adhesions and shortening the round ligaments.

In conclusion, he urged:

1. That the operation for the removal of the appendages should be promptly performed in every case in which it is evident that relief cannot be otherwise obtained.

2. It should be considered a last resort where there is a hopeful prospect of restoration to health by less dangerous methods, or without the sacrifice of the reproductive function.

3. Its consideration should be dismissed in every case capable of restoration to health by other plans of treatment.

The next meeting will be held in Nashville, Tenn., beginning on the third Tuesday in May, 1890.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

Stated Meeting, February 5th, 1889.

The President, DR. H. T. HANKS, in the Chair.

VESICAL CALCULUS CONTAINING A HAIRPIN.

DR. DUDLEY read the following report by Dr. Hicks, house-surgeon of the Randall's Island Hospital:

Miss D., age 24, born in the West, came to this city when quite young. She spent most of her childhood in the Children's Hospital on Randall's Island. While there she was treated for eczema and acute rheumatism. She left the hospital when six years of age, and for a time she slept with her brother, who was three years her senior. She says she then formed the habit of masturbation, which she has kept up more or less ever since.

Her residence with her sister was of short duration, and she was sent to the House of the Good Shepherd. There she was required to do housework and sleep in a dormitory which accommodated sixty persons. She continued the habit of masturbation, and seven months ago, while using a hairpin for the purpose, the pin passed into the urethra beyond her reach. One of her girl friends tried to extract it for her, but failed. The patient says she also told the physician of the institution of it, and he gave her medicine internally.

The morning following the introduction of the pin the patient had considerable pain and complete incontinence of urine. The pain and incontinence had existed ever since. She was re-admitted to Randall's Island Hospital January 30th, 1889, in a very debilitated condition and suffering excruciating pain, the latter

increasing when lying down or moving about. Stone in the bladder was readily diagnosed, and the patient was put under ether for its removal, which was successfully done by vaginal section, and the wound at once reclosed with silver-wire sutures, nine being used to close the incision.

Since the operation the patient has suffered little or no pain. The wound remains water-tight, and her average temperature has been 99°.

DR. DUDLEY said that stone in the bladder resulting from the presence of a hairpin was not very rare. In his short experience, he had met with them in four cases. He had seen one case in Dr. Gillette's practice, and one last year in consultation with Dr. Schoonover. In the latter case, the hairpin had been only two days in the bladder, but a calculus was already beginning to form. It was easily extracted by means of an ordinary long button-hook. The patient claimed that she had used the hairpin to pin her napkin with, and that in walking about it had slipped into the urethra. He considered this very doubtful, however, as the condition of the nymphæ and adjacent parts appeared to indicate that she had been in the habit of masturbating.

RETROVERSION WITH ADHESIONS—LAPARATOMY.

DR. DUDLEY also reported a case (the specimens from which had been lost) of retroversion of the uterus with firm adhesions, on which he had recently operated at the Post-Graduate Hospital. He performed laparotomy, and found the left ovary, with the uterus, lodged in the hollow of the broad ligament as it was folded over. The ovary contained a large hematoma, and the veins were as large as an ordinary pen-holder. He removed it, applying a catgut suture. The right ovary was completely veiled by false membrane, and it required a force equal to twenty-five pounds to tear it up so that the ovary could be removed. This stump was also ligated with catgut, and he broke up all the adhesions that he could, and then washed out the cavity. He wished to call attention to the danger of secondary hemorrhage in cases like this, where a large amount of traction was required for the removal of the second ovary. On inspecting the stump of the first ovary he found a slight trickling, which made it necessary to quilt the broad ligament, and he was confident that if he had not made this inspection the patient would have died of secondary hemorrhage. A large amount of traction on the broad ligament was very apt to strain the ligature already tied, and therefore it was a matter of great importance that a careful inspection should always be made before closing the abdomen.

DR. GRANDIN inquired what the chief symptoms were that led Dr. Dudley to perform laparotomy in this case.

DR. DUDLEY replied that for a long time the patient had suffered from pain in the left side of the abdomen. The patient was

admitted to the Woman's Hospital, and it was found that the left ovary was somewhat, though not very greatly, enlarged. After eleven weeks she was discharged unrelieved. He said that he had made the laparotomy because after years of treatment the patient had received no benefit. He started out to break up the adhesions and, restoring the uterus to its normal position, to fasten it forward, leaving the ovaries untouched if they were found not to be diseased. As it was, he performed an internal Alexander's operation, and in addition removed the ovaries because they were in such an abnormal condition.

DR. GRANDIN said that he supposed he performed the operation he did as a substitute for hysterorrhaphy.

DR. W. GILL WYLIE said that he did not see why the term hysterorrhaphy should be retained any longer, because at the present day no one passed sutures through the uterus.

DR. GRANDIN replied that, the aim of the operation being to hold the uterus up, the term seemed appropriate.

DR. MALCOLM MCLEAN inquired whether in such cases Dr. Dudley found that at the end of a year his patients were relieved of their symptoms. He had met with a great many instances in which, after a few months, the women were even worse than before the operation.

DR. DUDLEY said that he knew of a considerable number of cases in which, at the end of a year or more, the patients remained perfectly relieved. He believed that in those cases where they continued to suffer the condition of the uterine mucous membrane had been overlooked.

DR. GRANDIN said that all had met with cases in which the removal of the ovaries was not followed by permanent relief; and he believed that where this was the case it was due to exudation around the stump. Later on Dr. Coe would report a case which he thought had some bearing on this point.

DR. WYLIE said he wished that those meeting with cases unrelieved by the operation would report them fully and exactly. The more cases he saw, the more he was convinced that if the ovaries and tubes were completely removed it was very rare that there was any trouble afterwards. The most satisfactory cases that he met with were those on which he operated several years ago. It was his practice to perform laparotomy where there was present real disease of the ovaries or tubes which could be clearly made out by physical exploration, and not merely from hysterical and other nervous symptoms. Not long ago a gentleman had told him that a large majority of his (Dr. Wylie's) cases were failures; but when asked to give the facts on which he based his opinion, he could mention but a single case. Dr. Wylie said that all his cases were reported in full, and he had nothing to conceal in regard to them.

THE PRESIDENT inquired of Dr. Dudley if he felt quite as safe with catgut ligatures as with Chinese silk. He always felt somewhat afraid that the gut would slip.

DR. DUDLEY said that one could not use as much force with the gut as with silk, but he had never found it to slip. He had even used it in hysterectomy. In ligating the stump of an ovary, he transfixed the centre of the broad ligament, and then passed a double strand of catgut around each side. He had seen several cases in which marked symptoms remained after removal of the ovaries, but he did not believe that those were due, as a rule, to

plastic exudation around the stump, but to a diseased condition of the endometrium. Not infrequently the os was found to be eroded and the uterus congested and tender long after the operation; and he believed that if appropriate treatment was applied to the uterus the symptoms would usually disappear.

DR. WYLIE said that in cases like Dr. Dudley's the slipping of the ligature may be due to the manner of ligation. The fact was that the operator in ligating made considerable tension on the pedicle, and it was the retraction of the tissues which caused the difficulty. To prevent slipping of the ligature, too much was apt to be left on the stump, and not infrequently some of the ovarian tissue was allowed to remain. He could not agree with Dr. Grandin that the symptoms sometimes met with after the removal of the ovaries were due to plastic exudation, and he believed that the prevalent idea that exudation and adhesion is a disease was a mistake. Such exudation could do no harm unless it was attached to some diseased organ or gland, or interfered with the function, or stopped the lumen of an intestine. If a septic ligature was left, it was liable to cause localized septic material, which would, however, disappear in the course of time, usually by working its way out through the tract of the drainage tube. Where menstruation continued after the ovaries had been removed, the real cause was that the whole ovary had not been taken away. Inflammation contracts and shortens the ligaments, and frequently ovarian tissue is left in the stump. The portion remaining might become diseased, and sometimes cystic degeneration resulted. In two cases of his in which he thought he had removed the entire ovary, cysts developed as large as an orange. If there was accompanying uterine disease, this might require treatment, but, as a rule, if menstruation ceases the cases get well. There may be some reflex trouble with the atrophying and contraction of the uterus, but free dilatation and application of pure carbolic acid to the endometrium would relieve these troubles—hot flashes, indigestion, etc.

THE PRESIDENT said that, like many others, he had been in the habit of using the silk ligature, and he would like to inquire whether any one had noticed any trouble from this ligatures simply because it was silk.

DR. WYLIE said that, provided it was aseptic, it mattered little what the suture was composed of. Personally he preferred the silk ligature, because it was stronger. Catgut had the disadvantage of being elastic, and while nineteen catgut sutures might be perfect, the twentieth would perhaps fail.

THE PRESIDENT said that this was the opinion that he himself had formed. The catgut was not always entirely reliable.

RETROVERSION WITH ADHESIONS—CYSTIC OVARY—LAPARATOMY.

DR. WYLIE presented the ovaries from a case of his own, and said that he was glad Dr. Dudley had taken up the subject of retroversion with adhesions. In his case one of the ovaries presented the characteristics of a cystic tumor. With the fluid in it, it was the size of an orange, with the tube completely occluded and adherent to the sac of the cyst. The other ovary was not enlarged, but the tube was completely occluded, indurated, and nodular, and both were practically useless organs. The history of the case, which was an unusually interesting one, was as follows:

Mrs. M., the wife of an officer of the U. S. Army, aged 33, married second time. Years ago she had local peritonitis following miscarriage, and had several attacks since, but up to two years ago she did not consider herself an invalid. She had some dragging sensation about the pelvis, and at times had much trouble with her bladder. She had been seen by Dr. —, of Minnesota, who said she had simple, uncomplicated displacement and could be cured in a short time. After a few weeks she went to St. Louis, and for a long time was treated by Dr. Engelmann, and afterwards by Dr. Ewing. Both said she had retroversion that could be cured by treatment, but she was not benefited by either. She had lately had more pain, especially on the left side. She looked well and could go about, but now and then she would have violent pain. On physical examination I found the uterus somewhat enlarged and completely retroverted, the fundus being fixed backwards, low down in the pelvis, and the uterus somewhat flexed backwards, with the os lifted up near the urethra. I put her in Sims' left semi-prone position, but could not by very firm pressure lift the fundus forward. I put in a boroglyceride cotton pledget and asked her to return in a few days to be examined again. The cotton caused so much pain that she was forced to remove it. I made another careful examination, and told her and her husband that the uterus was retroverted and fixed by strong peritoneal adhesions, and that, in my experience, nine times out of ten when I found the uterus retroverted and firmly fixed by adhesions the patient had diseased tubes and ovaries, and could only be cured by their removal; that careful local treatment might give some relief, but, as a rule, did more harm than good; in about one out of ten cases where the uterus was firmly fixed and retroverted, the adhesions were the result of severe inflammation of the uterus, which caused an exudation on the uterus and made it adherent to the tissues behind, and that the tubes and ovaries were found normal and not much influenced by the adhesions, and that this case might be such a one; but that the only way to make anything like a certain diagnosis was to put the patient under ether, and, unless the adhesions gave way readily and there were no signs of enlarged or diseased ovaries or tubes, that laparotomy should be done; that the uterus might be kept up, dilated, and treated, or Alexander's operation could be done to shorten the round ligaments. I advised giving ether, and, after making a diagnosis, to proceed with either operation indicated. I advised a consultation. Dr. Polk was selected. He saw the case and agreed with me as to ether, and thought Alexander's operation would probably be the one needed.

The patient was courageous and did not wish any more local treatment, but desired radical measures taken at once. Her husband was anxious and dreaded an operation. He took his wife to Dr. T. G. Thomas, who made a careful examination and advised her to take ether and have the adhesions broken up and a

pessary inserted, etc., but advised strongly against any operation to shorten the round ligaments or open the abdomen.

Finally they decided to put her in my Sanitarium and do as I thought best. When the patient was etherized, bimanual examination made it perfectly plain that both tubes and ovaries were imbedded in adhesions, and that there was a cystic ovary the size of a large lemon or orange to the left, filling up that side of the pelvis. It took three-fourths of an hour to separate the adhesions and tie off the tubes and ovaries. The adhesion binding the fundus down was two inches broad, and so firm that it would not have been possible to tear it off without opening the abdomen. Any other treatment than removal of the diseased tubes and ovaries would have been not only useless but dangerous.

I have related this case in detail because I have lately discovered that many still treat such cases with pessaries, and that even quite young teachers of gynecology still practise and teach the use of the uterine repositor—an instrument that for many years I have considered obsolete and dangerous, since by opening the abdomen we have learned that, nine times out of ten, retroversion and adhesions mean salpingitis, local peritonitis, etc., and we know now why, in trying to break up adhesions years ago, our patients had many attacks of so-called cellulitis.

In some cases the tubes and ovaries are not involved, but we cannot in all cases be sure of this without opening the abdomen; and when we do open the abdomen, and find the tubes and ovaries healthy and the uterus bound down by adhesions, after breaking up the adhesions I have devised a very simple and efficient way of fixing and holding the uterus forward. Having freed all adhesions, I catch up the round ligament, at a point about equidistant between the fundus and pubic bone, with a pair of pressure-forceps, pull it up through the abdominal wound, then take a scalpel and scrape the peritoneum on the inner side of the round ligament, so as to make it raw. I then fold together the two halves of the ligament, and bring them into close apposition by means of two or four strong silk ligatures passed around and slightly into the ligament, so as to coapt and firmly hold the ligament folded, but not hard enough to cut into or destroy it. I may then make closer apposition, if indicated, by means of finer and more superficial sutures. These steps are repeated on the other round ligament and the wound closed. It is easily done, and, if the sutures are not placed deep enough to injure the bladder or include a ureter, it is about as free from danger as an exploratory incision. It is much to be preferred to the so-called hysterorrhaphy, and is much simpler than Polk's suggestion to close the abdominal wound and do Alexander's operation after breaking up the adhesions.

I have done this operation the past three years, and with most

excellent results on seven cases. Long before this, when removing the tubes and ovaries in cases of retroversion, I have so included the round ligament in my pedicle-ligature as to shorten it and sustain the fundus forward. A full description of the operation for shortening the round ligaments, when the abdomen is opened, was given in a letter last May to the *Pittsburgh Medical Review*.

DR. DUDLEY said that Dr. Wylie's report clinched his remarks on retroversion with adhesions, and that his deductions agreed with his own. In every one of five cases in which he had performed laparotomy for adhesions, he had found disease of the ovaries and tubes. He performed very nearly the same operation as Dr. Wylie, though he had not thought it necessary to scrape the surface of the round ligament so as to secure better adhesion. In the case which he had presented this evening, he had found a number of firm string-band adhesions between the uterus and rectum, and no treatment other than that adopted could possibly have been of any service.

THE PRESIDENT said that he had been coming to the same conclusions as Dr. Wylie and Dr. Dudley. He referred to a case of retroversion with adhesions which he had seen in connection with Dr. Lee. After three or four months of the usual treatment, there were no results whatever, and Dr. Lee then performed Alexander's operation. This also failed to do any good, and laparotomy was determined upon. When the abdomen was opened, it was found that the ovaries were cystic and both tubes enlarged and filled with pus. He had also met with several other similar cases in which, ten years ago, the tampon would have been used for months and months without any beneficial results. He believed that in every case where the uterus was bound down by adhesions which were not recent, it was advisable to make an exploratory incision, and then be guided as to what was to be done by the condition found.

In connection with Dr. Dudley's case of stone in the bladder containing a hairpin, he said he remembered a similar case which he had seen in consultation some years ago on Long Island. He had gone out prepared to operate with the Otis-Bigelow apparatus, but the patient was so thin that he was able by manipulation to make the hairpin protrude from the neck of the bladder, whence it was easily removed. In Paris, it was well known that instruments for the special purpose of extracting hairpins from the bladder were kept on sale.

AN UNUSUAL CASE OF ERETHISM.

DR. H. C. COE reported the following case:

Mrs. S., æt. 37, has been married for eighteen years, but is sterile. Her general health was excellent until within the past two years. Before marriage she indulged in masturbation without understanding its wrongfulness. At this time the seat of irritation was the clitoris, but after marriage it was transferred to the ovarian regions, its location being rather indefinite, though the patient thought that it was in the bladder, the pleasurable sensation being transferred to the external genitals only at the

height of the orgasm. In the course of time the latter phenomenon occurred spontaneously without manual irritation of the clitoris. Sexual congress became distasteful. The patient suffered from obstructive dysmenorrhea, and was treated for this twelve years ago by Dr. Byrne, of Brooklyn, who dilated the cervix with benefit. When she came under my observation, about fifteen months ago, she had been treated for several months by a member of this Society, who came to the conclusion that removal of the ovaries offered the only prospect of relief. The patient's condition was then a most unhappy one. She was in such a nervous state that walking, or riding in a street car, would bring on repeated orgasms. Her menstruation was scanty and was attended with severe ovarian pains. The uterus was anteflexed and had a small, subserous fibroid attached to the fundus anteriorly. The ovaries were somewhat enlarged and tender.

I assisted her physician in performing laparotomy in October, 1887. The operation was quite simple, there being an entire absence of adhesions. The adnexa presented the appearance so often seen, the tubes being normal and the ovaries moderately enlarged in consequence of chronic oöphoritis, although they contained numerous normal ovisacs. The fibroma, which was about the size of an English walnut, was not disturbed. The patient had an uninterrupted recovery, and has not menstruated since the operation; neither has she been relieved from her distressing symptoms, in fact they have become aggravated, so that last spring she wished to have her uterus removed, in the hope that this radical measure might break the vicious chain. This operation was actually proposed, but was abandoned by reason of my strong opposition. In the absence of her physician, I was called to see the patient (last June), and found her in a condition bordering on melancholia. The state of erethism was such that her sister was obliged to speak to her sharply two or three times, in my presence, in order to prevent her from having an orgasm. She kept up a peculiar twitching and moving of the thighs while talking with me. The slightest shock, such as the sudden closing of a door or the jar of the floor from a person's moving about the room, was enough to throw her into this state. The poor woman realized her condition keenly and struggled against the constant temptation to masturbate, but in vain; her mind was evidently giving way, she was unable to attend to her duties—in fact, she could not walk across the room without having extreme sexual irritation.

The centre of irritation was now transferred from the lower part of the abdomen to a point near the end of the spine. She felt a constant throbbing sensation in this region, which, "if she gave way to it," as she expressed it, "started up the tickling *feeling* in front," causing first pleasurable and then painful sensations. Strange to say, she had no inclination to masturbate when in bed. Sexual intercourse had become intolerable because of the extreme

and uncontrollable erethism to which it gave rise. On examination I found the external genitals rather atrophied than hypertrophied, the clitoris and labia being small. The vulvo-vaginal outlet presented that peculiar gaping appearance which is described as characteristic of habitual onanists. The uterus was small, anteflexed, and fairly movable. Behind and somewhat to the left of the organ there was a small induration, sensitive on deep pressure. I was unable to locate the seat of irritation. There was no sexual excitement during the examination, the external genitals being apparently insensitive. I urged the necessity of self-control and the probable need of sending the patient to an institution; if this was impossible, I advised that she should be constantly with an attendant, who might assist her in struggling against temptation. I saw nothing more of her until two months ago, six months having elapsed since my former visit. Her condition was not materially changed. She had no pain on locomotion, but suffered constantly with the burning, throbbing sensation in the back, associated with erethism. She had succeeded in controlling her desire to masturbate, but the temptation was stronger than ever. She had repeated orgasms, followed by pain. She was in great distress of mind and was certain that she would become insane unless relieved. She was willing to submit to any treatment, no matter how radical. On examination I found the external genitals insensitive as before. The uterus was small and anteflexed. Behind and to the left of it there was an elongated, indurated mass, apparently attached to the uterus and corresponding in position with the stump of the left tube. This was sensitive on pressure, and, so far as the patient could determine, seemed to be the centre from which radiated the peculiar burning feelings which she had constantly experienced since the operation, but *not* before. There was an external point over the lower end of the sacrum to which were also referred the sensations in question; this was insensitive on pressure.

At first sight a second laparotomy seemed to be indicated in this case; but after having the patient under daily observation for eight or ten days, I came to the conclusion that an operation would be even more empirical and liable to failure than those which are usually undertaken for the relief of persistent pelvic pain. Supposing the painful nodule behind the uterus to be the stump of the left tube with included nerve fibres, the question arose, "Would its excision insure against a return of the peculiar pain in the same or some other spot, attended by the same sexual excitement as before?" After studying her case very carefully and using local galvanism daily, I came to the conclusion that she was not a subject for gynecological treatment, either palliative or operative, since her malady had become mental. While under observation in a private institution she developed lobar pneumonia, and was for several days in a critical condition. An

ischio-rectal abscess developed, but it was so deeply seated that it could not be detected until it had ruptured into the rectum. The erethism seemed to be increased by the presence of the abscess. The patient subsequently returned home better than before her entrance into the hospital. A month later she reported that the irritation was less severe and continuous, though at times it was as bad as before. I have heard that she feels quite aggrieved because I declined to remove her uterus—an operation which had been proposed to her.

This case illustrates forcibly the uselessness of removal of the ovaries for the relief of extreme sexual irritation. It also shows that clitoridectomy would have been equally unsuccessful. I can only conceive of one class of patients in which oöphorectomy might cure masturbation—where the inclination to indulge in the practice is only felt at the menstrual period. I was once inclined to suggest it in the case of a married lady, who was deeply sensible of the wrong nature of masturbation, but found in it the only means of relieving the severe ovarian pain, associated with intense sexual excitement, which attended menstruation. During the intermenstrual periods the temptation was absent. In this instance, where there was no actual mental perversion, the cessation of menstruation would probably have led to a discontinuance of the habit; but to attempt to cure a patient whose mind is really the seat of the trouble, by inducing the premature menopause, is not in accordance with the ordinary principles of medicine. It would be more logical to cut off her head. We must admit that there is a wide difference between self-abuse in children and young women and the same practice in the case of the unfortunate patient whose history I have detailed. In the former it is simply a bad habit, which may be overcome without strictly medical treatment; in the latter it is just as truly a disease as chronic alcoholism. The entire nervous system is at fault. The irritation which is apparently centred in the external genitals is as difficult to localize as are all the obscure reflex pains in the female. The failure of attempts to relieve these by surgical operations is a matter of daily experience.

DR. DUDLEY, having learned from Dr. Coe that the patient had never been pregnant, said that, if she had ever borne a child, there might be some scar-lesion about the clitoris which gave rise to the trouble. But even if she had never been pregnant, he believed that the nerves in the vicinity of the clitoris were diseased. At the same time it was undoubtedly true that after long-continued masturbation the mind became affected. He did not think this case a rare one. He knew of one patient in whom locomotor ataxia developed as a result of masturbation; and yet the woman absolutely denied the habit until she was watched and detected. He remembered another case in the Woman's Hospital. Dr. Emmet removed a stone from the bladder, and there was so much cystitis that he left a catheter in the bladder, for the purpose of washing it out. This woman actually masturbated alongside

of the catheter, and it was found necessary to tie her hands to prevent her from doing it.

DR. COE asked, if the disease was located in the nerves about the clitoris, how its existence could be ascertained. In his case there was an entire absence of sensitiveness in the external genitals.

DR. DUDLEY replied, from the symptoms and the anatomy of the parts. We know from Quain and other high anatomical authorities that the nerves of the clitoris control the sexual orgasm in the female.

DR. COE said that he could not agree with Dr. Dudley as to the limitation of sexual irritation to the clitoris. He had recently been looking over Baker Brown's reports of his cases of clitoridectomy, and the results were not by any means positive or satisfactory.

DR. DUDLEY said that every gynecologist knew that if in an examination the parts about the clitoris were touched, it produced an immediate effect upon the patient. He believed that the nerves of the clitoris are primarily affected, and that afterwards the nerves higher up had become implicated.

DR. COE said he should like to ask Dr. Dudley whether, in his case, he would have excised the clitoris.

DR. DUDLEY said he would most certainly have done so rather than have removed the ovaries and tubes, as was done in this patient.

DR. WYLIE asked Dr. Grandin if this was the case he had referred to earlier in the evening as bearing on the after-effects sometimes met with from removal of the tubes and ovaries.

DR. GRANDIN said it was. At one time the seat of trouble was referred to the stump of the pedicle, which was, no doubt, enlarged from plastic deposit. He thought it probable that nerve fibres were included in the deposit, and thus the adhesions became a source of pain.

DR. WYLIE said that he did not think the adhesions had much to do with the trouble. There had probably been a septic thread, and it was this, no doubt, which had given rise to the abscess referred to in the history. He did not think that this case should be cited as one weighing against laparotomy. He himself had never removed the ovaries and tubes for masturbation, and he never expected to do so; nor did he know of any prominent operator who adopted this practice. Neither did he think highly of removal of the clitoris for the prevention of masturbation, and he had never done it himself. He had not made a special study of such cases, and when they came into his hands he usually referred them to some competent neurologist, as he believed the nervous system was at fault and no local treatment was of much avail.

DR. H. D. NICOLL said that he had seen three or four cases in which the clitoris was removed for masturbation. Two of them had been operated on by the late Dr. Sims simply as a forlorn hope, and the operation had resulted in complete failure. In these cases the tissues about the base of the clitoris, as well as the clitoris itself, had been excised.

DR. MALCOLM MCLEAN said that he had met with two of these unfortunate cases, though in one of them the erethism was not due to masturbation. In this case his attention was directed to the uterus for the existence of menorrhagia; but the use of the

curette was followed by negative results. When he resorted to the constant current, however, the menorrhagia disappeared, and with it the annoying orgasms from which the patient had suffered. In the other case, also, the uterus was found to be at fault, and treatment of the endometritis brought complete relief.

DR. GRANDIN said that he saw the case with Dr. Coe, and in his examination made every effort to see if he could localize the origin of the orgasm in the clitoris, but utterly without success. No amount of titillation of the parts had any effect whatever in exciting an orgasm. He could not, therefore, agree with Dr. Dudley that the removal of the clitoris would have done any good, and he believed that under the circumstances such an operation would be unjustifiable. He would not by any means quote the case as one weighing against the performance of laparotomy for the relief of pyo-salpinx, as to the propriety of which he quite agreed with Dr. Wylie.

DR. DUDLEY said that the point which he wished to make was that the clitoris was at fault originally; and he believed that if a minute history of the patient could be obtained from the beginning, this would be found to have been the case. Later on the erethism could be located anywhere. He repeated that in such cases he would excise the clitoris in preference to removing the ovaries and tubes. He had often asked patients on whom the latter operation had been performed in regard to their capacity for sexual enjoyment, and almost invariably they replied that the erethism was considerably more marked than before the laparotomy was done.

DR. COE said that he did not ask Dr. Dudley whether he would have removed the clitoris in preference to the ovaries and tubes. It was to be remembered that it was not he who did the laparotomy, and personally he would not have performed either operation. Dr. Nicoll's experience confirmed him in his opinion as to the inadvisability of excising the clitoris.

DR. VON RAMDOHR referred to a case he had met with in which there were no symptoms about the clitoris, but there was a single point on the os uteri the touching of which would produce an orgasm. In this instance there was displacement of the uterus.

THE PRESIDENT said he believed the more one had to do with this class of cases, the more he would be inclined to agree with Dr. Coe and Dr. Wylie that, as a rule, local or operative treatment was of no avail. If there was any local disease present, however, he would advise its treatment, in the hope that relief might thus be afforded, and Dr. McLean was certainly to be congratulated on the results obtained in his cases. If there were much irritation about the clitoris, it might perhaps be well even to remove the organ, although the experience of Baker Brown and Sims did not offer much encouragement.

SARCOMA OF THE PELVIS.

DR. MCLEAN said that at the last meeting of the Society he had reported a case of extensive sarcoma of the pelvis. It was the second case that he had ever met with, the first having been seen about four years ago. He had now to report a third case which had just come under his observation. It had been represented to him as a case of bleeding epithelioma of the cervix; but when he came to make an examination he found the cervix perfectly

healthy. There was metrorrhagia, and a further examination revealed the presence of a large excrescence, which commenced apparently in the ischiatic portion of the pelvis. It was, he believed, a true osteo-sarcoma, beginning in the pelvic bone, and the growth had now existed for about eight months. Such disease, as far as he knew, was quite rare.

DR. WYLIE did not think these cases extremely rare. When cancerous tissue, even if it was not osteo-sarcoma, was located near the bone, it was apt, for some reason, to be very hard. He had met with one very remarkable case in which the diagnosis of osteo-sarcoma of the pelvis was made by several prominent gynecologists, but in which the sequel proved that they were mistaken. The patient was a young girl, and the cancerous growth, which filled the pelvis very tightly, was supposed to start from the sacrum. If, after making an external examination of the patient, he had been asked to give a diagnosis, he would have agreed with the others; but as the patient was young, he thought it would be advisable to open the abdomen and find out just what the condition was. This was accordingly done, and it was then found that the growth was a very hard, solid ovarian tumor with almost two ounces of fluid in the centre and with a long pedicle. If it had not been removed, it would inevitably have destroyed the patient's life. At the end of a year she was alive and perfectly well, and, for aught that he knew, was still.

DR. COE referred to a case which he had seen, in which an impacted fibroid was mistaken for pelvic sarcoma.

DR. MCLEAN said that in the case he had reported there could be no doubt of the diagnosis, as the tumor could be readily felt through the rectum firmly attached to the bone. Dr. Wylie having asked whether it was within or without the peritoneum, he stated that it was unquestionably without the peritoneum.

THE PRESIDENT mentioned a case he had met with some time ago, in which there was at first considerable difficulty in arriving at a correct diagnosis. There was, in the first place, impaction of fecal matter in the rectum, and when this was removed it was found that there still remained an exostosis from the sacrum. In addition there was an ovarian tumor, and when the fluid was removed from this (the patient being unwilling to have the growth taken out) there was found also a fibroid of considerable size. There could not have been a sarcoma in this case, because the patient had now been under observation for three or four years.

HYDROCELE IN INFANTS.

DR. A. M. JACOBUS reported two cases of hydrocele which he had recently met with in young children, as he believed this was a comparatively rare condition in such subjects. The first case was in a baby seven months old, and was one of hydrocele of the cord, encysted. The other was in a boy two years and a half old, and was a hydrocele of the scrotum. In the latter case the child's mother objected to tapping, and for some time past compound iodine ointment had been used without any appreciable result. In the baby the hydrocele had disappeared under the use of the same ointment. He said he would like to know if any of the other

members had met with similar cases, and, if so, how they treated them.

DR. WYLIE said that he saw a case not long ago in a new-born infant. He transferred the case to Dr. Keyes, and he cured it, though he did not know what method he employed.

THE PRESIDENT said he remembered a case which he saw several years ago when connected with Dr. Jacobi's clinic. It was in a child probably five or six years old, and Dr. Jacobi drew off the fluid with a hypodermic needle.

MENTAL DERANGEMENT IN THE COURSE OF EARLY PREGNANCY AND ASSOCIATED WITH SUBINVOLUTION OF THE UTERUS.

DR. WYLIE said that for several years he had been working on a subject which deeply interested him. He had noticed in certain women a tendency to mental derangement during the first four months of pregnancy, and that while the symptoms usually disappeared at the end of that time, when the uterus rose out of the pelvis, they were very apt to return after parturition and continue until involution of the uterus was completed. He mentioned the case of a lady from Pittsburgh, who had been confined in an insane asylum for six months before she was brought to New York. On making an examination he found the uterus still much enlarged and with a double laceration of the cervix. He softened the uterus and sewed up the lacerations; after which he employed boroglyceride tampons until the involution of the organ was complete, when the patient got well. After the birth of a second child there was a return of the same mental trouble, but the symptoms were mild for many months, and special treatment was not resorted to. When she was first brought to New York the insanity was of a mild type, and she was sent to Dr. Wylie's private Sanitarium. She at once became so violent, however, that he had her transferred to the insane wards of Bellevue Hospital. She was seen in consultation by Dr. Dana, who said that the insanity was epileptiform in character, and also expressed the opinion that the trouble might perhaps be due to uterine irritation. An examination revealed the fact that there was subinvolution of the uterus, and, in addition, disease of the ovaries and tubes. These organs were accordingly removed by laparotomy, and after he had reduced the subinvolution of the uterus the patient went home cured.

The point of special interest in these cases was the appearance of symptoms of insanity during the early part of pregnancy only, and the recurrence of the trouble during subinvolution of the uterus. In one instance he was consulted as to the desirability of bringing on abortion in a patient two months pregnant, who had become affected in this way. He strongly urged, however, that no such step should be taken, as he felt convinced that the symptoms would disappear after the fourth month, and this actually proved the case. After labor there was some return of the trouble,

but as soon as involution was completed it finally disappeared. The same was true in the case of a physician's wife who had recently been under his care.

OBSTETRICS AND GYNECOLOGY AT THE KENTUCKY STATE MEDICAL SOCIETY.

BY E. S. MCKEE, M.D., CINCINNATI.

At the meeting of the Kentucky State Medical Society, May 9th, 1889, DR. J. C. CECIL, of Louisville, made the report on the progress in obstetrics. He favored abdominal section more than electricity in extra-uterine pregnancy. In discussing Cesarean section as opposed to ovariectomy, he quoted authorities deciding that the former was proper in all cases where the child is living. In delivering the after-coming head, he would hasten its delivery with the forceps, even at the expense of the perineum and cervix. In the third stage of labor, he mentioned Berry Hart's theory, and recommended a compromise between Créd  and Ahlfeld. He waits until the placenta separates, then, if there is delay, uses the method of Créd . He also ably discussed the subject of anti-septics.

The report on gynecology was made by DR. WM. H. WATHEN, of Louisville. Pelvic hematocoele was the special subject to which his remarks were directed. He gave the generally accepted definition of hematocoele, as blood tumor in the pelvis, encapsuled within or without the peritoneal cavity. He said that all pelvic hematocoeles were extra-peritoneal, and thus it was impossible for hemorrhage into the peritoneal cavity to become rapidly encysted, so as to form a fixed tumor in the pelvic or abdominal cavity. The blood is mixed with lymph, and coagulates so slowly that it is not confined to any one place in the cavity, but changes its position upon the movements of the body. The blood could not be confined by a layer of effused lymph immediately above it, and, if the hemorrhage into the cavity is at all considerable, death would probably result before it could be confined by adhesions of the superimposed intestines. Intra-peritoneal hemorrhage is nearly always fatal. This is really always caused by primary or secondary rupture of ectopic gestation. Dr. Wathen said that the blood never becomes encysted in intra-peritoneal hemorrhage from defective ligation in laparotomy for removal of the tubes, ovaries, etc. He cites as causes of encapsuled hematocoele sudden metrorrhages of normal menstruation or of pseudo-menstruation following abdominal or pelvic operations and rupture of a tubal pregnancy.

After giving the symptoms and diagnosis of hematocele, he advised against surgical interference, unless the sac should rupture into the peritoneum or suppuration is imminent. He recommended making an opening and giving drainage into the vaginal vault, if fluctuation can be detected from below; if ruptures occur into the peritoneum, or if fluctuation is well marked above the pelvis, abdominal section should be done.

A CASE OF TUBAL PREGNANCY

which advanced to term without rupture was reported by Dr. ARCH. DIXON, of Henderson. There was an enlargement which he thought an ovarian cystoma. He determined to make an exploratory laparotomy, and to his surprise opened up a sac which contained a macerated fetus at full term. The post-mortem showed a case of tubal pregnancy with no trace of any rupture. The case was one of exceptional difficulties of diagnosis from the beginning.

A CASE OF TUBAL PREGNANCY

was also reported by Dr. CHARLES M. MANN, of Nicholasville. This case resulted fatally, and a post-mortem was held.

A CASE OF EXTRA-UTERINE PREGNANCY

was presented in a paper by Dr. J. B. EVANS, of Riley's Station.

He thinks the ovule can be impregnated before it reaches the Fallopian tube, and then get into the abdomen. He believes the Fallopian tube can be contracted until it will not admit the passage of the ovule, though it will permit the entrance of the spermatozooids. He reported a case of extra-uterine pregnancy in which a patient suffered long with peritonitis, and passed fetal bones and other structure per rectum.

Dr. W. H. WATHEN thought the case of Dr. Dixon certainly exceptional, and could not understand the possibility of the occurrence of an extra-uterine pregnancy which could be carried in the tube for this length of time. The tube walls are so thin and weak that by the twelfth week the tube ruptures and the fetus escapes into the abdominal cavity. He was sorry Dr. Dixon did not make a thorough examination of the lining of the sac. He believed it impossible to absolutely diagnose extra-uterine pregnancy before the twelfth week; it is mere guess-work previous to this time. He agreed with Tait that there is no possibility of an extra-uterine pregnancy unless it occurred in the tube, with possibly a chance for an ovarian pregnancy. An abdominal pregnancy never has and never will occur, and it is ridiculous to talk of an abdominal pregnancy occurring primarily. We have the electrical treatment and the operative treatment. He argued against treatment by electricity, and said, when rupture takes place, operate at once and treat the case antiseptically. If rupture does not occur, then laparotomy is the treatment.

DR. J. C. CECIL thought a very fine dissection and microscopical examination would be necessary to sustain the diagnosis in the case of Dr. Dixon. He did not agree with the assertion that there are no primary cases of abdominal pregnancy. He thought the only thing that could be done was the performance of abdominal section. The subject was further discussed by Drs. J. M. Foster, of Richmond, and E. S. McKee, of Cincinnati.

PROLAPSE OF THE OVARIES

was the subject of a paper read by DR. E. S. McKEE, of Cincinnati. He said this was a symptom often, rather than a distinct disease, yet it has many peculiar characteristics which entitle it to separate consideration. He thought the disease much more frequent than usually considered. The dislocation may occur into the lateral pouch of Douglas, the true pouch of Douglas, and the anterior or vesico-uterine pouch, or the infundibulum of the inverted uterus.

Displacement of the ovary usually occurs in this manner: it sinks downward and backward, and describes an arc toward the median line. The Fallopian tube and ovarian ligaments form cords. The descent of the ovary brings it to that part of the pelvic fossa known as the retro-ovarian shelf, where it may remain.

Causes which lead to this trouble may be: increase of weight (which induces traction from below or pressure from above), congestions, displacements (particularly the posterior ones), or violent straining at stool.

Diagnosis is not generally difficult. Marked pain on walking, on coition, and sometimes hysteria and melancholia, with spasms of sickening pain in the pelvis, are described by the patient. She should be examined lying on the left side. Rectal examination permits higher exploration.

The essayist thought Campbell's knee and chest position of much benefit in the treatment. He said pessaries do more harm than good. Bozeman's method of columning the vagina is excellent. Tait's operation had not been followed by the permanent good results expected. He considered Schultze's method still under inspection. The intestines should be kept empty with some preparation of mercury, and sexual intercourse carefully regulated, if permitted at all. He had seen prolapsed ovaries follow the ascending uterus as it escaped from the pelvis at the fourth month of pregnancy, and remain in their proper places after delivery. Hysterorrhaphy affords relief in some cases, and sometimes, *en dernier ressort*, extirpation is necessary.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

Meeting of February 14th, 1889.

The President, DR. GILES S. MITCHELL, in the Chair.

DR. EDWIN RICKETTS read the following paper and case report
ON

THE ABUSE OF PESSARIES.

It was with interest that I looked through the display of surgical, gynecological, and dental instruments that have been taken from the ruins of Pompeii, and much to my surprise there was not a pessary to be found in the whole valuable collection.

The vaginal speculum that I saw is nicely made and well designed, and the only improvement that our vaginal speculum of to-day has over it is that the blades are wider and are concaved on the inner side.

Other gynecological instruments will do credit to the similar ones of to-day, and I could not help but ask myself the question, "Have we, with our many so-called improved pessaries, made any advancement in the treatment of versions over that of two thousand years ago?"

The indiscriminate use of pessaries by the medical profession in general, is by far too common a practice at the present day, and abdominal surgery is doing good in proving the assertion that pessaries in so many cases have been the source of *evil* rather than of *good*.

Versions are common, and are of enough importance to demand interference in exceptional cases, and their discovery is many times accidental.

Versions as the result of adhesions from previous inflammatory processes of the uterus and its appendages, are now better understood, and they are not the cases to be treated by the pessary.

The pessary treatment in many cases is full of dangers, and many simple and perfectly harmless versions of an adherent uterus have been converted into serious cases of pyo-salpinx by the persistent efforts of the pessary-monger.

In the minority of cases wherein mechanical treatment is appropriate, relief may be given the patient, when she is suffering from a choked circulation of the uterus, by elevating the organ; but in the majority of cases the risks of secondary inflammation are greatly increased. By this elevation the relief of symptoms

is many times mistaken for a cure, and in the end the inflammatory process, of which the pessary is the exciting cause, may prove serious, for those patients who do not have these recurring inflammations are the exceptions to the rule.

In conversation with some abdominal surgeons of America, England, and the Continent, I find that many of their cases that have diseased appendages had been treated previously for a variable period of time with pessaries, and in the majority of those cases this method of treatment had increased the severity of the symptoms to such an extent that removal of the damaged appendages was necessary, and this removal, by abdominal section, proved the utter fallacy of the pessary treatment in such cases.

A prominent obstetrician of Cape Town told me recently that while he was on his way to see a patient he was called in and urged to attend a lady in labor, as her obstetrician could not be found.

Upon digital examination he found a large-sized Hodge's pessary, and with difficulty removed it. Finding that the presentation was a normal one, and being in a hurry, the doctor called in an American physician to attend the case and left the house.

After the birth of the child, the American physician wrote the following note to the family physician and left the house:

MY DEAR DOCTOR:—Dr. S. delivered your patient of a huge Hodge's pessary, and I have delivered her of a small child.

Very truly,

DR. C.

While at Birmingham, England, I called three times within one week at the most prominent surgical-instrument maker's shop, and each time I found the proprietor selling pessaries. After the last purchaser had departed, I inquired and found that three of the purchasers were physicians in good standing in the profession. I said, "How's this that you sell so many pessaries? Do you think so many are needed?" With a twinkle in his eye he told me, after I had promised not to say anything to hurt his trade, that "It is astonishing how many pessaries I sell, and I do not believe that so many are needed, for the reason that many times I am asked the question, by some of the purchasing physicians, which is the top and which the bottom."

The abdominal surgeon and gynecologist should be the first to recognize this very important subject, and yet many times they fail to point out promptly to the general profession this very common abuse of a relatively much-needed instrument, but one which the great bulk of the profession seem to be using as a mere random and routine treatment of pelvic ailments.

The following is a brief history of a case that came to Mr. Lawson Tait's clinic, and which I saw throughout its course:

A. D., age 27, married for over five years; had one child four years ago. Had been ill ever since her confinement, menstruating

about every three weeks; the periods were very profuse and lasted seven days. All exercise aggravated the distress, especially standing or walking, which caused almost unendurable agony. Marital relations were almost unbearable.

The greatest pain was just before her menstrual period began, yet the pain continued to be severe all during her period. In walking she stooped forward in a half-bent position.

She had been in several hospitals, and besides had been under the care of many physicians outside, but had never received any permanent relief; on the contrary, she gradually grew worse.

On introducing the index finger into the vagina, a Hodge's vulcanized ring, which had been adjusted for some supposed misplacement, was found. This was with some difficulty removed, and on further examination the contents of the pelvis were found to be fixed completely—the roof of the pelvis being a hard mass with no softening at any point.

On January 9th, 1888, she came fully prepared to accede to any operative interference that might be advised. Mr. Tait, being fully satisfied that there was existing a double pyo-salpinx, told her that it was necessary to remove the whole of the uterine appendages, to which she readily consented.

The operation was performed just a week later, under absolute cleanliness. It was difficult to recognize the various pelvic organs; the right ovary was first removed, in which was found an abscess containing about three ounces of pus. There were cysts of the left ovary the size of walnuts, and the left tube was in a mass of effusion and contained about a half-ounce of creamy pus. During the operation bleeding was very profuse.

A glass drainage tube was used, and was removed on the ninth day.

The patient made a good recovery, and the uterus returned to its normal position, to which no other method of treatment—certainly none by pessary—could have brought it.

DR. HALL said he agreed to almost everything the essayist had said in regard to pessaries. He regarded it as a measure which afforded only temporary relief in some cases, but was often productive of mischief. In this connection the speaker desired to state that a microscopical examination of a specimen, which he was not able to present when he reported the case one month ago, revealed an abscess of the ovary. He made this statement here because abscess of this organ is said to be of rare occurrence.

DR. E. W. MITCHELL said that he did not understand the essayist to condemn the pessary in toto, but to enter a protest against its abuse. The speaker's impression of the action of the pessary was derived from a study of Thomas' text-book on gynecology. The pessary is a valuable instrument in proper cases. Many women suffering from displacements are thus again made comfortable and enabled to resume their work. In some instances, after a time the pessary may be dispensed with altogether. Still, it is very liable to abuse; for this reason Bigelow denounces it

altogether, and Emmet regards it as a dangerous instrument if there be any inflammation about the uterus. This is no reason, however, why we should engage in a wholesale condemnation of the pessary. It is indeed sometimes difficult to make a diagnosis between an inflammatory exudation and a retroverted uterus; the *tactus eruditus* is then necessary to answer this point. The injuries that have followed the use of pessaries should be to us necessary warnings that a correct diagnosis must precede the introduction of this instrument.

DR. T. P. WHITE said that everything has its use. This is true here as well as elsewhere. When properly applied, the pessary does a great deal of good. Of course we cannot cure a salpingitis with the pessary; other measures intended for relief may also be abused, as, for instance, Tait's operation for removal of the appendages, hysterectomy, etc. It requires considerable diagnostic ability to know where to use the pessary. In this respect the paper was wanting; it did not describe when and where to use the pessary, and what kind of pessary should be employed. As portrayed in the paper, it simply describes a physician's incompetence or carelessness.

DR. CLEVELAND would like to know how often the pessary was used at the present time compared to formerly. His observation was that it was not so often used; he himself did not resort to it as often as in former years. Midwives introduce them more often than doctors for alleged displacements, sometimes even in the first months of pregnancy.

DR. MCKEE seldom resorted to the pessary. He saw an interesting case of its abuse four years ago. An old woman suffered from occasional attacks of vaginal hemorrhage. It was ascertained that she had worn the same pessary for fifteen years, yet she would never submit to an examination so that it could be removed.

DR. REAMY said he was disappointed in the tendency of the paper. Not a single, solitary fact was mentioned upon which the essayist based his condemnation. He gave only a vague description of the use of pessaries, whilst his object was to show the abuse by competent physicians. Good men may sometimes make a mistake in diagnosis—the speaker could relate many such instances—but this was no reason why these useful agents should be entirely condemned. In an old woman whose vagina is atrophied, who has an immense cystocele and is unable or unwilling to undergo an operation, a watch-spring pessary will keep up the bladder and render her comparatively comfortable; a wholesale condemnation in such an instance would exclude such a help. Sometimes the round ligaments have become elongated by the weight of the subinvolved uterus and vagina; here the pessary is a powerful auxiliary in keeping up the downward pressure by the weight of these organs. The speaker knew women who had been invalids and were cured of their displacements by the proper use of pessaries.

DR. GEO. E. JONES thought that in most instances it required considerable mechanical ingenuity to adjust a pessary properly. He once had an old lady with an immense procidentia uteri. As she could or would not submit to an operation, he had to have recourse to some mechanical contrivance for holding up the prolapsed parts. He was two months in fixing up an instrument before it answered its purpose. He took an ordinary bougie

armed with a wire, bent it so that it would properly fit in the vagina, made a cast of it with block tin, and finally vulcanized it in a dentist's vulcanizer. The patient wore this pessary eighteen months with comfort, when it had to be changed somewhat.

He objected, however, to the use of stem pessaries and the combination pessaries with abdominal supporters. The speaker had seen no less than half a dozen different kinds which were not properly fitted to the patients who wore them. He could, therefore, not join in the entire condemnation of pessaries for this reason. When properly applied, there can be no objection to their use.

DR. CHAS. REED said that when he started out in practice he was thoroughly imbued with the principles laid down by Graily Hewitt, than which there was never a more pernicious system promulgated. He learned, however, to use the pessary less and less, until finally he abandoned it altogether, because he found that it would never fit, hence was inadequate. To fit properly, it must be moulded to the part, just as Dr. Jones explained. In former years, whilst practising in Hamilton, O., patients would often come from a distance to have a pessary adjusted. He fitted them in the way described, and they served a purpose; but he did not believe they were ever a means of cure. They are rather opposed to a cure, by interfering with nutrition and causing general relaxation. They serve merely a tentative purpose. The cases cited in the paper are illustrative of the abuses. It is a common occurrence for them to be abused in cases of retroflexed fundus or inflamed appendages. One thing must always be insisted upon: *A pessary should never be employed until the retroverted or retroflexed organ has been previously replaced.*

DR. GUSTAV ZINKE said he would not speak of those cases where, through mistaken diagnosis, the pessary had been applied, but of instances where the diagnosis was correct and the application of the pessary supposed to give relief. He admitted that in cases of prolapse where a woman was too old or would not submit to an operation, a properly constructed pessary would serve a good purpose. But, in his opinion, based upon experience, no pessary could be so constructed and adjusted, in cases of *versions* or *flexions*, as to correct the displaced and distorted organ. A pessary, to remain in position and accomplish the end desired in the class of cases mentioned, would have to be supported in order to sustain the uterus in position, which would require a very firm perineal body or some artificial external support. In cases of the former, the uterus is rarely displaced, and when this occurs experience has proven that permanent relief can be accomplished within a reasonable length of time without the use of the pessary, but with repeated digital reposition of the organ, judicious tamponing, and rest in the genu-pectoral position. Ruptured perineum should be restored. In case of displacement due to subinvolution of the vagina, electricity, tamponing with tannoglycerin, or colporrhaphy have proven effectual remedies. A glance at frozen sections will show that no pessary can correct a version or flexion without a perineal body or some other external support. Indeed, experience justifies the speaker in maintaining that in case of a good perineum the pessary is unnecessary; and where the latter must be held in position by means of a stem

attachment fixed to an abdominal bandage, as in the McIntosh and similar devices, the result is more harm than good.

In the absence of a perineum, and without an external support, the pessary introduced for the purpose of curing a flexion or version of any kind ought to be so constructed as to rest against the symphysis pubis in front and the hollow of the sacrum behind.

However, there is a certain class of cases (prolapse and procidentia) in which the ring-pessary or a sponge in the vagina is palliative (not curative) in its effects. These instruments are held in position by distending the vagina—a method not at all favorable to existing conditions of the organs. It is true that for a time they prevent descent of the uterus, and hence may be resorted to in cases where women will not submit to operative measures, or where there is advanced age or feebleness and where temporary relief only is required. The speaker knew of a case of vesicocoele and rectocoele accompanied with prolapse amounting almost to procidentia. This patient has worn a sponge for over thirty years, removing, washing, and replacing it daily, which affords her perfect relief, and hence obviates the necessity of submitting to an operation.

DR. WHITE said, in answer to the previous speaker's remark stating that a pessary could only be properly adjusted if resting on the symphysis in front and sacrum behind, that it required an instrument of at least four inches in length if resting on the promontory, and five inches if the posterior end rests in the hollow of the sacrum. The largest Hodge or Smith pessary only measures about three and a half inches in length, and this is too large for most cases. The womb is supported by the solidity of the perineum and thick fascia.

DR. WRIGHT said some criticisms had been made against the stem pessaries. In some cases no other instruments could be used, barring an operation. He had now a patient under treatment, very obese and with a flabby abdomen, who had suffered from procidentia a long time. He tried everything he could think of without avail, until he finally had recourse to the cup-and-stem pessary, which fulfilled its purpose.

DR. REAMY replied that his criticism as well as Dr. Jones' applied to the intra-uterine stem, and not to the stem supporting a cup or ring pessary.

DR. REAMY said two gentlemen had, in their opposition to pessaries, proposed operations as a substitute for the cure of displacements, giving rise to the inference that the speaker as well as other gentlemen were opposed to operations and regarded the pessary as a substitute. This was not the understanding; the pessary is a valuable *auxiliary*. The action of the pessary is wrongly understood by certain inventors, who look upon this instrument as a plug to hold up the uterus. The idea advanced by one gentleman, that the uterus must be held up transversely by a pessary laid across the symphysis and sacrum, is entirely erroneous. Albert Smith insisted that his pessary should not rest on the symphysis. A pessary of this nature must rest in the long axis of the vagina, the anterior end resting against the rami of the pubes and the posterior arms passed up well behind the uterus.

DR. JULIA CARPENTER said it must be that there was an abuse of pessaries, as the immense quantities manufactured by machinery would not be made if there was no demand for them.

She referred to a case seen in hospital practice. The patient

had had a large metal ring introduced many years before in her native country, Germany. It was imbedded in the tissues, which adhered together over it, except at one point which gave the clue to the trouble. She removed the ring with difficulty, partly due to its large size.

There was, of course, a judicious use of pessaries, notably so in the class of cases referred to by Dr. Reamy. There are times when a patient can pass from a life of invalidism to one of comfort, simply by the use of a proper support. For instance, an elderly lady, 65 years of age, very fleshy, consulted her on account of procidentia, and a train of serious disturbances of which that was the cause. A small, well-fitting pessary and a few treatments restored her to perfect comfort. This was one year ago, and she is still well and wonderfully happy, as she had been an invalid over ten years.

There are general principles to be followed in the use of internal supports. As much weight as possible should be removed from above, as, when that is done, the organs below have a tendency to rectify themselves.

DR. W. H. WENNING remarked that no objection could be raised against the arguments advanced, both by the essayist and the members who discussed the subject, against the abuse of pessaries: every good thing may be abused. But he was astonished at the crude notions entertained by one of the gentlemen as to the action of the pessary. The idea that the uterus should be forced up out of the pelvis, and held by an artificial barrier resting on the pubes and sacrum, to be effective, is certainly erroneous. Such is perhaps the idea of a midwife or inexperienced physician, but should not be that of a routine gynecologist. Something similar to this is the action of the old Zwanck pessary, which, by its expanding blades resting upon the wings of the ilium, is made to support the prolapsed uterus in a fixed position; but for this very fixedness it is now entirely abandoned. The invention of Hodge, and improvements by Albert Smith, Schultze, and others, mark a new era in the application of pessaries, which previous to that time acted simply as vaginal plugs. The speaker placed himself entirely on the side of Drs. Reamy and White in their explanation of the action of the lever pessary. This instrument, to be safe, must allow a certain movement of the uterus during exercise which naturally belongs to that organ in health, the restricting power being only so much as is necessary to prevent too great a mobility of the womb. For this reason the pessary is more or less curved, which adapts it beautifully to the contour of the fornix vaginae. It is not true that the pessary rests on nothing, for the lower limb rests against the rami of the pubes, and the other against the uterus in the posterior fornix of the vagina. Any pressure exerted against the anterior portion will force up the posterior arch higher into the vaginal vault. The speaker also agreed that a pessary should never be introduced before the organ is replaced; hence it will be inefficient in cases where the uterus is firmly bound down by adhesions. The pessary is not a substitute for operations, but a powerful auxiliary. The speaker would, however, not be understood as to be unequivocally wedded to the instrument: it is unfortunately often a "necessary evil," and must be attentively watched. From inattention to this point arises the abuse spoken of. The speaker always felt some trepidation after he introduced a pessary, and always insisted upon an

early return of his patients for examination. If a pessary appears to fit well in place and gives to the patient a sense of comfort and support, it certainly fulfils its purpose; but even then it requires watching, for the parts may undergo some change, or the instrument itself become accidentally displaced, which, by exerting pressure in a wrong direction, may cause some irritation. A few years ago the speaker performed a perineorrhaphy upon a young married woman. The result did not meet the desired expectation, and he was forced to introduce the pessary as an auxiliary. The comfort it afforded was so great that the lady would not part with the instrument under any consideration. She was, however, cautioned against its possible dangers, and kept under constant surveillance while in the city. She then left for New York, and while there accidentally displaced the instrument, but was ashamed to consult a physician. The pain became so intolerable, however, that with a great effort she succeeded in removing the instrument, but then experienced again the same sense of bearing down as before the first introduction. It was again replaced when she returned to this city, and she removed to Dayton, O. She was advised by letter to consult Dr. Reese, of that city, for fear of some other accident. She neglected this, however, until she had worn the pessary again over a year before it was removed. Some excoriation was found by Dr. R., and she was treated accordingly. The last letter received states that she is now able to get along entirely without a pessary. She had been advised by the speaker previously to endeavor to discard it, but refused for fear of the return of the old symptoms.

Now, here was a case which might be called an abuse of the pessary, if it had been simply introduced and the patient allowed to go her way.

As regards the taking of a cast, the speaker did not think that absolutely necessary, at least not of the whole vagina. The object of this method, which has been described by Levy, of Munich, in a monograph, is simply to get the shape and direction of the cervix and fornix vaginæ; the shape of the entire vagina is not necessary, for if a pessary should be moulded according to the whole canal it would simply be a vaginal plug. Moreover, the comparison between a dental plate and a properly fitting vaginal cast does not exactly hold, for the mouth is a rigid, firm structure to which the plate is to be applied, while the vagina is a soft, pliable organ. The pessary should be long and narrow and curved, rather than short, flat, and wide; then it will assist the muscles and thick fascia in supporting the uterus. In conclusion the speaker stated that he rarely introduced pessaries in his hospital patients, as he preferred to treat them by tampons, etc., because, when dismissed with a pessary, they rarely return for re-examination and inspection. On the whole, he found but little satisfaction from any form of pessary in flexions and anterior displacements, but in prolapsus and retroversion the pessary is often a very useful instrument.

DR. REED replied, in reference to the method of taking a plaster cast of the vagina, that the upper part of the cast must be hollowed out to give the form of the pessary, and the lower cut off. The speaker had described this method a few years ago in the *N. Y. Medical Journal*, to which he would refer his hearers for particulars. His criticism on the use of pessaries during this dis-

cussion did not refer to any pessary in particular, as the Albert Smith, but to these instruments in general.

DR. RICKETTS remarked that he must adhere to the views laid down in his paper. There could be no question that these agents are too frequently abused. Their utility in any instance was very questionable; the support a pessary should afford appeared to him like an attempt of a person to lift himself over a fence by pulling on his bootstraps. Whatever could be done by a pessary could also be done by a tampon as well. Aside from those instances of wrong diagnosis in which the use of a pessary is positively injurious, every form of displacement, particularly retroversion, can be remedied just as efficiently by means of the tampon and rest.

DR. WENNING said, in reply, that certainly the tampon was also one form of a pessary, although of only a temporary character. He would admit that if properly applied and frequently changed it may be made to answer better than any form of pessary, but very few women will submit to a treatment by this plan covering a period of many months, and necessitating the almost daily visit and examination of a physician.

DR. REAMY rejoined that even the tampon is a poor pessary. He would resort to it as a substitute for the latter, only in those instances in which there was pelvic inflammation.

REVIEWS.

ELECTRICITY IN THE DISEASES OF WOMEN. By G. BETTON MASSEY, M.D., Physician to the Nervous Department of Howard Hospital; late Electro-Therapeutist to the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases, etc. Illustrated, 8vo, pp. 200. Philadelphia: F. A. Davis, 1889.

This little work is modestly presented to the profession as "the first attempt at a complete treatise on the electrical treatment of the diseases of women." It has certainly, as the writer states in his preface, "more of the nature of a mirror of the author's daily work than of a classical research into the literature of the subject," but this, perhaps, is an advantage when considered from a purely practical point of view. Admitting that the scientific use of the strong current is yet in its infancy, he states that "it is an agent capable of being properly applied without the need of a very great amount of technical skill." The purpose of the book is to show that this necessary skill can be readily gained by any one, if he will but study the remedy in a practical way and use reasonable care in performing the operations. He must also, unfortunately, "consent to abstain from reading any but the most recent works upon electro-therapeutics, as a certain result of a perusal of many of them is a failure to comprehend the present position of electrical science." This last proposition, which could with equal propriety be extended to all other depart-

ments of medicine or science, is so astoundingly narrow in its inception and teaching that we can only account for its existence by supposing it to be the result of an overlooked typographical error or illegibility of manuscript.

In the body of the work there are necessarily, from the very nature of the subject, many points open to criticism, but the work as a whole, though somewhat elementary and hardly a "complete treatise," is good, plain, and practical. The apparatus required for gynecological electrical applications is given in its simplest form; the slight knowledge of the physical qualities of the galvanic, faradic, and franklinic currents which is absolutely necessary is demonstrated by a few simple experiments and comparative illustrations; and the technique of the applications is carefully described in each of the conditions where electricity has shown itself beneficial. The concluding chapter gives the contra-indications and limitations to the use of strong currents. W.

BERICHT UEBER DIE THÄTIGKEIT DER GEBURTSHÜFLICH-GYNÄKOLOGISCHEN KLINIK ZU INNSBRUCK.—REPORT OF THE OBSTETRICAL AND GYNECOLOGICAL CLINIC AT INNSBRUCK. By PROF. F. SCHAUTE, M.D., assisted by DR. FRANZ TORGGLER, Clinical Assistant.

This report is the outcome of a long-cherished desire on the part of Prof. Schaute to collate a history of the work done at the Innsbruck clinic, and embraces the period between October 1st, 1881, and March 31st, 1887. The hope is expressed that the work will dissipate the notion prevailing in Austria as to the paucity of material at Innsbruck; the reader may form his own conclusions as to the justice of this modest wish. During the period mentioned 2,302 women were admitted to the obstetrical wards, of whom 2,183 were delivered at the institution. The claim is made that the morbidity of this institution—11.59%—is the lowest so far reported; this percentage, viewed in the light of the unfavorable equipment of the hospital, is a very gratifying showing. The results following the substitution of corrosive sublimate for carbolic acid are likewise striking; under the employment of carbolic acid as a disinfectant for the dressings, wounds, etc., there was a mortality of 2.21%; with the use of the bichloride this was reduced to 0.21%. The average mortality in the institution was 0.92%. The report abounds in statistics and interesting details, and will repay perusal. L. R.

ITEMS.

DR. PAUL F. MUNDÉ has been appointed consulting surgeon to St. Elizabeth's Hospital, New York.

DR. H. MARION SIMS and DR. HENRY C. COE have been elected professors of gynecology at the New York Polyclinic. DR. COE has also been appointed surgeon to the N. Y. Cancer Hospital.

DR. L. EMMET HOLT and DR. AUGUST SEIBERT have been elected professors of diseases of children at the New York Polyclinic.

At a meeting of the Faculty of the NEW YORK POLYCLINIC, held June 20th, 1889, the following preamble and resolutions were adopted :

Whereas, This institution has been called upon to mourn the loss of its President, the late Dr. James B. Hunter; therefore be it

Resolved, That in the death of Dr. Hunter the Faculty of the Polyclinic has lost an active, efficient, and conscientious leader, and the institution a teacher of rare experience, untiring devotion, and distinguished success.

Resolved, That we recognize that in the abrupt termination of his laborious, able, and worthy career the medical profession has lost one of its most accomplished and honored members, one whose death we profoundly deplore, whose memory we venerate.

Resolved, That we extend to his family our heartiest sympathy, assuring them that we, too, have lost a trusted companion and a loyal friend.

Resolved, That a copy of these resolutions be presented to the family of Dr. Hunter, and that they be published in the *New York Medical Journal*, the *New York Medical Record*, and the *AMERICAN JOURNAL OF OBSTETRICS*.

Signed,

PAUL F. MUNDÉ,	} Committee.
E. B. BRONSON,	
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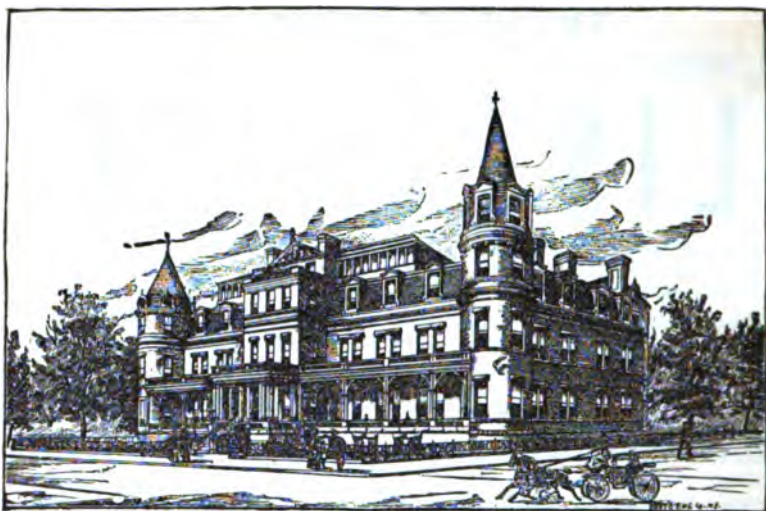
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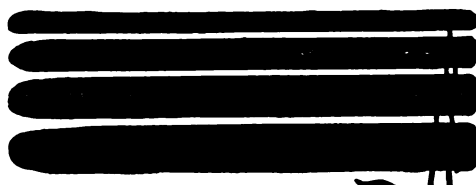
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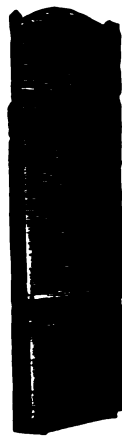
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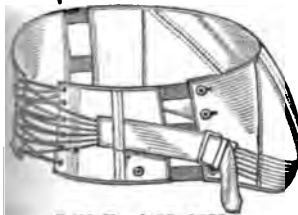
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THE AMERICAN JOURNAL OF OBSTETRICS

AND

DISEASES OF WOMEN AND CHILDREN.

VOL. XXII. AUGUST, 1889. No. 8.

ORIGINAL COMMUNICATIONS.

THE PATHOLOGY OF ECTOPIC PREGNANCY AND PELVIC
HEMATOCELE.¹

BY

WM. H. WATHEN, M.D.,
Louisville.

NEARLY everything written upon the pathology and treatment of ectopic pregnancy prior to 1880 is of no practical value, and even a brief *résumé* of the views taught by a few of the then recognized authorities upon this subject would be taxing your patience beyond endurance; so I will pass by the superabundance of this pseudo-scientific material, and hurriedly present to you what I conceive to be the accepted teachings of to-day, based upon thorough scientific examinations of the ectopic gestation sac and its contents in post-mortem examinations and in abdominal sections. And if I come to conclusions not entirely in harmony with the views of such distinguished authorities as Mr. Lawson Tait and others, I beg that you will bear with me and remember that in scientific matters the heterodoxy of to-day may become the orthodoxy of to-morrow. I will not

¹ Address of the Chairman of the Section on Obstetrics and Diseases of Women at the Newport meeting of the American Medical Association, June 25th, 1889.

theorize upon matters about which we know comparatively little, but will try to put facts in logical relation, so that you may judge if my premises and conclusions are correct.

1. The ovum is never impregnated in the uterus, and the conjugation of the male and female elements must take place before, or just after, the ovum enters the tube.

2. Ectopic pregnancy is always primarily tubal, with the possible exception of ovarian pregnancy; the tube ruptures before the fourteenth week into the folds of the broad ligament or into the peritoneum.

3. Abdominal pregnancy cannot occur except as a result of primary or secondary rupture, and if the villous or placental attachments are destroyed the ovum immediately dies, because it cannot form secondary attachments to other structures.

4. If, in rupture into the peritoneum, the ovum retains villous or placental attachments, it may be possible under certain conditions for the pregnancy to continue, though it is not probable. If the amnion is ruptured in the early months, the embryo or fetus will die.

5. So-called interstitial pregnancy does not *always* rupture into the peritoneum; it usually does.

6. If we define pelvic hematocele as an encysted or confined tumor formed of blood, then intra-peritoneal hematocele is not possible.

Mr. Tait is a recognized authority upon the pathology and the treatment of ectopic pregnancy, but he is nearly alone in his belief that in normal pregnancy the conjugation of the two elements takes place in the uterus. I have read all he has written upon this subject, and I do not believe that his premises are correct or his conclusions logical; and nearly all the facts that are known about the physiology of reproduction sustain me in this view. His assertion that the spermatozooids cannot pass out through the Fallopian tubes unless disease has destroyed the ciliated epithelium, is based upon no positive evidence, and is contrary to what observations on lower animals have proven. It is true that the tubes in the rabbit, the bitch, and other animals are not identical in shape or position with the Fallopian tubes of woman, but they serve in a degree the same purpose, and some of them are lined with ciliated epithelium, which sustains the same relations to the movements of the spermatozooids. In the bitch, each tube enters the uterus

by separate communications about as small as the diameter of the cavity of the tubes in woman in their passage through the uterine parenchyma. Desquamative salpingitis, or other diseased conditions of the tubes, may obstruct the passage of an impregnated ovum into the uterus, but would also tend to obstruct the passage of the spermatozooids into the peritoneum, and by no means could such conditions facilitate their passage. The ciliated epithelium has no effect upon the movements of the spermatozooids; they move by an inherent force at a rate estimated by Ch. Robin at .78 inch in ten minutes; by Henle at one inch in seven and one-half minutes; and Sims says they move their length in one second. They would easily overcome any possible obstruction caused by the ciliæ of the tubes, for Robin has observed that they push out of their way epithelial cells and crystals ten times their size. The inherent power of movement in the spermatozooids is proven in those cases where women have become pregnant with nearly an imperforate hymen and with atresia vaginæ, with only a small fistulous and diseased canal leading to the uterus; or where the spermatozooids entered the uterus through the urine in the bladder. In Koeberle's case the uterus had been amputated two years before for fibroid tumor, and the pregnancy in the *tube* resulted from the passage of the spermatozooids to the peritoneal cavity through a small fistula in the cicatrix of the cervix. Leopold has demonstrated that one tube may be entirely closed and that an ovum may be impregnated by spermatozooids from the other tube. "He tied the right Fallopian tube in rabbits in two places and excised a portion of the tube between the ligatures; the left ovary was carefully removed, and the abdominal wound was closed. After recovery the rabbits were put to the male. In two such cases pregnancy followed." If the ovum is not impregnated before or just after it enters the tube, degenerative changes will destroy its vitality before it reaches the uterus; and it is claimed by recognized authorities, including Charpentier, that after it passes the outer third of the tube it is covered by a layer of albumin which the spermatozooids cannot pierce. Coste, in his observations upon rabbits, found the unimpregnated ovum in the cornu of the uterus so densely covered by a zone of albumin that the spermatozooids could not enter it, though they were found in great numbers immediately in contact with it. The impregnated ovum in the guinea-pig

does not enter the uterus for three or four days, and in the bitch it does not enter for nine or ten days ; by analogy we may infer that in woman it passes slowly through the tube, and is probably not in the uterus before the tenth day after impregnation. During this time the endometrium becomes succulent and thickened to give a proper nidus upon which the ovum may attach itself, and from which it may be nourished. This causes the ovum to be caught and held near the fundus uteri by the swollen tissues until fixation occurs. If the surfaces of the endometrium were not held in immediate contact, the ovum would gravitate to the lower segment of the uterus, where it would become attached and cause placenta previa, or it would pass out into the vagina.

The ovum cannot form villous attachments until it is held immovably in the maternal structures, and this is not possible except in the tube or the uterus. If the ovum fails to enter the tube, it will soon perish in the abdominal cavity and then be absorbed, for it cannot fix itself to the peritoneum, as this and surrounding structures are in nearly constant motion. Many cases of ovarian pregnancy have been reported, and some of them by men of more than national reputation, including the names of Campbell, Spiegelberg, Kiwisch, Puech, and Leopold, but their conclusions are based upon insufficient evidence, and it has probably not been positively shown that any specimen was an ovarian pregnancy. This cannot be determined except by a thorough microscopical examination of tissues from all parts of the gestation sac by a careful and well-trained microscopist. An ovary may be greatly enlarged by cystic growth, but we can always identify the origin of the tumor by a microscopical examination.

In none of the reported cases of ovarian pregnancy had ovarian stroma been found, except confined to one side of the sac, and this condition may readily occur in cases of tubal pregnancy that have ruptured into the folds of the broad ligament ; but the stroma should be found in all parts of the sac were the pregnancy ovarian. An examination into the history of most of these cases, and of the specimens that have been preserved, will exclude them from the list of ovarian pregnancy. But few of the specimens have been preserved, while those reported by Campbell have all disappeared, and the descriptions of them cannot be accepted because of their great antiquity. In

Spiegelberg's case, I believe the pregnancy was in the folds of the broad ligament, and pressure upon the ovary caused it to spread over and form a part of one side of the sac. In the case reported by Puech, there is no positive proof that the specimen was an ectopic pregnancy, as no characteristic embryo was found. Mr. Tait says, "Not one of the reported cases has been subjected to the necessary conditions of criticism, a satisfactory compliance with which alone can establish the occurrence of ovarian pregnancy." And he has closely examined all cases reported. He also reminds us that tubal pregnancy may so distort or change the natural conditions of the tube or ovary that their existence cannot always be demonstrated; hence the belief in ovarian pregnancy.

In Parry's statistics we find cases of ovarian and abdominal pregnancy recorded; but as these statistics were collected from imperfect or mutilated records made by men of no experience in microscopical and pathological research, they are practically of no value as evidence to prove that pregnancy may primarily occur outside of the tube. Ectopic pregnancy may occur at any point in the tube from a little distance within the fimbriated extremity to the uterine cavity, and is caused by partial or complete closure of any part of the tube, usually the result of desquamative salpingitis, but sometimes the result of other pathological conditions. The tube ruptures into the folds of the broad ligament or into the peritoneum before the end of the fourteenth week. There are a few cases reported where it is claimed that tubal pregnancy continued to term without rupture, but the powers of observation in the men who made these reports were defective, and these were cases of rupture into the folds of the broad ligament when the sac was small.

The report of a case of tubal pregnancy continuing till term was recently made to the Kentucky State Medical Society, but the gentleman who made the report admitted that he was not positive in his diagnosis, not having made a careful examination by the microscope; and this is about the history of all these cases. The rupture is usually into the folds of the broad ligament, where the pregnancy may continue even to term, if the ovum retains villous attachments and the amnion is not ruptured; or it may rupture secondarily into the peritoneum and cause death, if not speedily removed by laparotomy. Sometimes

the tube ruptures primarily into the peritoneum, resulting in death unless the sac is ligated and removed.

I again refer to the fact that primary intra-peritoneal pregnancy is impossible, because the ovum cannot be held securely in any one place, and hence cannot unite itself to maternal structures by villous attachment, and must finally perish for want of nutrition. The following is on page 59 of Mr. Tait's "Lectures on Ectopic Pregnancy": "If the pregnancy had ruptured its way into the peritoneum, it would have been at once digested, for I am certain, from what I know of the digestive powers of the abdomen, no gelatinous fetus of the tenth week could resist them." The abdomen cannot digest a fecundated ovum at any stage of its development until it has become dead matter, the result of other causes; it first dies and then is absorbed by the peritoneum, for living matter cannot be absorbed as such by the peritoneum. While it may be possible for the ovum to continue to develop in the peritoneum after rupture of a tubal pregnancy, I doubt if the evidence in any of the reported cases is absolutely conclusive.

If the woman survives the hemorrhage, shock, or septicemia, the pregnancy could not continue, unless the villous or placental attachments to the tube are not separated; for if these relations are destroyed, the embryo or fetus dies immediately of asphyxia, just as it does where the placenta is separated in intra-uterine pregnancy. It is a sad commentary upon the intelligence of members of the medical profession to quote the following case of Dr. James Braithwaite, of Leeds, as one of secondary abdominal pregnancy: "It seems pretty clear that in my second case the placenta was detached from its original position and took root again in a fresh one." No one could arrive at such a conclusion except he be totally ignorant of even the elementary principles involved in the physiology or pathology of reproduction. It could just as easily have taken root upon the top of her head, for a placenta once separated is always separated. It is a recognized fact that the placenta in extra-uterine pregnancy may make epiphytic inroads on adjacent or surrounding tissues, but this must occur before it is separated from its original attachment.

The placenta may, in extra-peritoneal pregnancy, finally attach itself to the uterus, omentum, intestines, pelvic and abdominal walls, etc., by stripping off and carrying a layer of peri-

tonem before it, and many of these cases have been reported as abdominal pregnancy. In primary or secondary rupture of a tubal pregnancy into the peritoneum, the ovum will perish unless it retains its attachments and the amnion remains intact. In the latter months of pregnancy, the ovum may possibly continue to develop in the abdomen after rupture of the amnion. Jessop, Lechuyse, Matecki, and Schreyer claim to have seen such cases, but the correctness of their diagnoses is not generally accepted. Jessop's case appears to be the most reliable, but Mr. Tait, in speaking of it, makes the following statement: "I have placed this case by itself, because it is the only one of its kind, and the only one which, after critical investigation, will admit of being termed 'abdominal' or intra-peritoneal pregnancy. Certainly those quoted by Parry will not do so, and I have met with no others."

Koeberle's and Kellar's cases, where the body of the uterus had been amputated, have been given as intra-peritoneal pregnancies, but they are typical cases of tubal pregnancy. Part of the tubes was left with the ovaries, and in an obstructed tube the ovum became imprisoned and was developed.

While interstitial pregnancy usually ruptures into the abdominal cavity, I cannot agree with Mr. Tait that it always does so, and I am sure there are cases that justify this belief. In my discussion before the American Association of Obstetricians and Gynecologists at the meeting in Washington in September, 1888, I reported a case, treated in 1873, which I think was clearly shown to be interstitial pregnancy that ruptured into the uterus. Thomas' fourteenth case, and Parkes' case (*AMERICAN JOURNAL OF OBSTETRICS*, vol. xx., page 536), and Maschka's case (*Wien. med. Wochenschrift*, 1885) were not cases of rupture into the peritoneum.

Pelvic hematocoele sustains such intimate relations to ectopic pregnancy that it is not possible to describe the pathology of one of these complications without referring to the other; hence my reason for considering these two subjects together.

The generally accepted meaning of pelvic hematocoele is an encysted intra-peritoneal or extra-peritoneal blood tumor in the pelvis, which may extend into the abdominal region. Thomas says that intra-peritoneal hematocoele is much the more frequent, and Gill Wylie believes that any considerable effusions of blood in the pelvis are always intra-peritoneal. Nearly every author

who has written upon pelvic hematocele teaches that blood may accumulate in the peritoneal cavity and become rapidly encysted and fixed by the effusion of a layer of lymph exudation. Mr. Tait and a few other authorities do not adhere to this belief; nor do I. It is impossible for an accumulation of blood in the peritoneum to become encapsulated so as to form a well-defined tumor in the pelvic or the abdominal cavity. Hemorrhage into the peritoneum causes an increased flow of serum, which encourages bleeding by further diluting the blood and thus preventing quick coagulation. It obeys the laws of gravitation and may change its position upon the movements of the body, so that it cannot be confined by a layer of effused lymph. Mr. Tait has seen nearly one hundred cases of intra-peritoneal hemorrhage, and they all died except the two upon whom he did abdominal section; and in post-mortem examination there was no fixed blood tumor, and but little, if any, peritonitis. Such cases are nearly invariably fatal. If the woman does not die of shock caused by pain and loss of blood, she may die of septic infection. If it were possible to have encysted intra-peritoneal hematocele, why does it never occur after abdominal sections for the removal of a diseased tube, ovary, or uterus?

There are numerous cases reported of hemorrhage into the peritoneum, after abdominal section, where ligation or suturing was imperfect, but in no instance has this blood been found encysted. Encysted hematocele may result from a sudden cessation of a pseudo-menstruation that sometimes follows laparotomy, but the blood is poured out into the areolar tissues under the peritoneum and does not enter the cavity.

The fact that a blood tumor extends above the pelvis, or even to the umbilicus, does not indicate that the hemorrhage is intra-peritoneal. This may occur in extra-peritoneal hematocele. The peritoneum is a tough and elastic membrane, easily separated from its attachments, and hemorrhage into the loose pelvic connective tissue may dissect up the layers between the rectum and vagina, around the rectum, from its attachments to the sides of the pelvis or anterior abdominal wall, etc.

I have recently treated two patients, with extra-peritoneal hematocele; in one, the tumor was between the folds of the broad ligament, the rectum and vagina, and around the rectum, causing annular constriction. It could not be easily felt above

the pelvis. In the other, there was no tumor between the rectum and vagina, nor was there much effusion around the rectum, but the enlargement extended up nearly to the umbilicus. In intra-peritoneal hemorrhage, no well-defined and fixed tumor can be felt per vaginam or by abdominal palpation, while in extra-peritoneal hemorrhage the subjective and objective symptoms, when carefully observed, are so nearly pathognomonic that an error in diagnosis is hardly possible. Intra-peritoneal hemorrhage is nearly always caused by primary or secondary rupture of a tubal pregnancy; and while it is barely possible to diagnosticate an accumulation of blood in the peritoneum in a physical examination, the history of the case, the profound shock, and other evidences of internal hemorrhage will usually enable us to make a correct diagnosis. For this condition, abdominal section and ligation of bleeding vessels is the treatment indicated.

But I will dismiss this part of the subject and confine my further remarks to encysted or confined pelvic hematocoele, which is always outside of the peritoneum. This may be caused by sudden metrostaxis of normal menstruation, or pseudo-menstruation following abdominal or pelvic operations, or by rupture of a tubal pregnancy into the folds of the broad ligament. The diagnosis can usually be made by observing the following symptoms: Sudden access of pain, and generally shock; a well-marked feeling of faintness, with accelerated pulse, and sometimes elevation of temperature.

The sudden development of a tumor in the folds of one broad ligament, or upon both sides of the uterus, fixing the organ, or between the rectum and the vagina, or above the pelvis, would exclude inflammatory effusion. The hematocoele does not always extend high enough to be distinctly felt above the pelvis, but it often causes a well-defined rounded and fluctuating tumor that may extend as high up as the umbilicus. The distinct vaulting of the upper surface of the tumor, the accumulation of blood around the rectum causing annular constriction, the concave vaulting of the lower surface of the tumor, and the sudden fixation of the uterus, are characteristic signs of extra-peritoneal hematocoele which, if carefully observed by an experienced gynecologist, would prevent error in diagnosis, if he sees the woman very soon after the tumor

has formed. Errors in diagnosis may occur if he does not see the patient for some days after the hemorrhage.

Extra-peritoneal hematocele nearly always results in speedy recovery, if the woman is kept quiet in bed, and her bowels, bladder, etc., are properly attended to. Within two or three weeks, most of the blood will have been absorbed and convalescence well established. As it is quite exceptional that suppuration or rupture into the peritoneum occurs, surgical interference is not often necessary; but if the subjective or the objective symptoms indicate the presence of either of these conditions, then the abdominal cavity, or the hematocele, should be opened, thoroughly cleansed, and a drainage tube inserted. If in suppuration the fluctuation can be detected through the vagina, it is best to enter the tumor through the vaginal vault; but if no fluctuation can be discovered in a vaginal examination, but is felt above the pelvis, laparotomy should be done and a drainage tube used in the lowest part of the wound. If the sac ruptures into the peritoneum, laparotomy should be done immediately.

A YEAR'S EXPERIENCE WITH APOSTOLI'S METHOD, WITH REPORTS OF CASES.

BY

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HAVING begun the use of Apostoli's method about the month of October, 1887, and having had an almost daily experience with it ever since, and some nine months having elapsed since the termination of the year, I am perhaps justified in now laying my experience in this most interesting department of gynecological therapeutics before the profession. Before I began the use of it, I had a somewhat too exalted opinion as to its value. This was followed by the usual reaction, and, being brought face to face with a number of cases noted for their difficulty, I became a little discouraged. Later on, as the benefits of the

treatment began to slowly but surely mount up with the increasing number of cases, a firm and lasting belief in its capabilities has been acquired. I mention these three phases of opinion of the treatment because I see around me evidences that my confrères who are trying it are going through the same stages. In the following remarks, I shall endeavor to give the treatment its true and well-earned place, as I believe it is as much in its interest to avoid forming an erroneously high opinion of it as it would be to decry it altogether.

For the information of my brethren who are seeking knowledge as to the best method of going about this treatment, it might be well to lay before them a few points which experience has taught me. In several former articles, I have given the Leclanché conglomerate cell as the source of electricity. I am now altogether willing to admit that the old pattern of Leclanché cell with a porous cup, which can be purchased in quantities in the United States for about half a dollar apiece, is quite as good for this purpose; also that the improved Law battery will do equally well. I may state that thirty cells will give enough power for general use, owing to improvements, which I shall shortly describe, for conveying the current to the morbid growth. The cells should be arranged with the zincs pointing to the right—the first zinc being attached to the second carbon, and the second zinc to the third carbon, and so on. The beginner should remember that the wire from the first carbon is called the positive pole, and the wire from the last zinc the negative pole.

The next question to be asked is: What is the best appliance for turning the current on and off? During the first year in which I used this method of treatment, I employed the Gaiffe current collector which I brought from Paris, and which was similar to that used by Apostoli; but after hearing of the Bailey rheostat, I procured one, and a very short trial of it convinced me that it was far superior to the Paris instrument. The disadvantage of the double-dial collector of Gaiffe is that you have a wire going from each cell to the switchboard, so that you have as many sources of danger of a broken connection as there are contact points. In the one I used, there were 120 contact points and consequently 120 places at which the current might be accidentally broken. This accident, in fact, has actually happened to me on several occasions. Since I have

adopted the Bailey rheostat, the current has always been turned on and off with perfect smoothness, and with it I have been able to make the finest possible adjustment from one to over two hundred milliamperes.

Another defect of the switchboard collector is that the first ten or fifteen cells, being used more than the next ten or fifteen, are run down to one-half or one-quarter of the strength of, the latter ; so that, no matter what care be taken to run down all the cells equally, we cannot avoid occasionally striking a very weak or very strong cell—in some cases the difference in strength caused by adding another cell to the circuit being sufficient to cause an appreciable shock. With the Bailey rheostat all the cells are worked equally at the same time, so that with ordinary use the battery requires almost no attention during the first one or two years, and then all the cells must be recharged together.

The Bailey rheostat is manufactured by the Law Telephone Company, Liberty street, New York. Should the ratchet on this instrument become too loose, it must be tightened up with the screw provided for the purpose, otherwise its weight might cause the carbons to drop an inch or two into the water without our wishing it.

We now come to the important question of the best galvanometer. My own experience has been limited to Gaiffe's instrument, of which I have two, one measuring from one to fifty milliamperes, and the other from ten to two hundred and fifty. The former has of course proportionately larger spaces for each milliampere. I am in a position to state, from information which I have received from a number of correspondents in the United States, that the Gaiffe instrument is far superior in accuracy to any instrument so far manufactured in this country, although I can see no reason why such an instrument should not be made here. In the meantime, I can recommend any one purchasing an outfit to obtain that part of it, at any rate, from Paris.

It might be well to mention, with regard to the galvanometer, that the needle which registers the strength of the current on the scale is only a nickel one, fastened at right angles to the real magnetic needle, which is concealed under the coil of wire. I mention this because some of my confrères, who knew where the north and south poles in their city were situated,

spent some time in vainly trying to get the needle of the galvanometer to point in those directions. It is also important that no steel instrument, such as dressing-forceps or scissors, nor any faradic machine, be allowed to lie near the galvanometer when it is in use. Care must be taken, too, that no magnetic machines be placed in its vicinity. A place should be chosen for it as far removed from iron pipes as possible. It is also desirable that the galvanometer be placed considerably below the level of the patient, so that while sitting in front of her we may keep our eye constantly on the needle.

The current, having been led from the first carbon through the artificial resistance of the rheostat and then through the galvanometer, must now be made to enter the patient so as to encounter the least amount of friction; for friction means heat, and, unless the surface of contact of the electrode with the skin be very large, a high power cannot be used, owing to the burning, and even vesication, which it produces. In this consists one of the great secrets of Apostoli's success.

By means of his abdominal electrode of moist potter's clay, which adapts itself to the open mouth of every pore of the skin, the electrical current finds its way into the body through many thousand pores, and thus resistance to its entrance is reduced to a minimum.

Martin, of Chicago, has introduced a modified electrode, of the same size, however, as Apostoli's, but differing from it in that, instead of a flat cake of clay to which the pole is attached by means of a piece of zinc, a metal dish filled with water and covered with animal membrane is employed.

Engelmann uses a piece of absorbent cotton loosely sewed to several thicknesses of tinfoil, to which the wire is attached. The advantage of Apostoli's clay is that its weight is sufficient to keep it applied closely to the skin; but its disadvantages are that it is apt to soil the clothes, has a constant tendency to dry unless frequently moistened, and feels very cold when applied to the skin unless previously warmed, it being as good an abstractor of heat as it is a conductor of electricity. If it is warmed before its application it is apt to dry up, while if it is immersed in hot water it is apt to wash away.

Martin's electrode is neat and clean, and if, when not in use, it is left with the animal membrane immersed in bichloride solution, it will not soon get an unpleasant odor or putrefy. Some

of the water can easily be poured out each time and some boiling water introduced so as to make it pleasantly warm; but some day when we least expect it, and during an application, it will play us false, for a tiny hole will appear through which the contained water will escape over the patient's clothing. After this accident had occurred to me several times, I determined to discard the animal membrane and to employ a combination of Apostoli's and Martin's electrodes by filling Martin's metal dish with Apostoli's clay and covering it with one or two layers of gauze. The result has been all that I could desire. The clay, being contained in the metal dish, does not escape upon the patient's clothing and is not difficult to apply. Instead of mixing the potter's clay with water only, I have added from one-third to one-half of glycerin, which, owing to its great avidity for moisture, will always keep the clay wet, so that I am no longer in danger of finding that my clay has dried up during the night. As an extra precaution, I am in the habit of wrapping up my abdominal electrode in a large sheet of gutta-percha tissue or oiled silk, into which I throw an ounce or so of water to supply the thirst of the glycerin.

This electrode weighs four or five pounds, which is sufficiently heavy to guarantee its close application to the abdominal integument, and does away with the danger which I have several times experienced, of the patient's suddenly removing her hands in order to gesticulate while talking to me during the application.

Martin's instrument is somewhat expensive, so that, to meet the wants of those to whom expense was a consideration, I had the same thing manufactured by a local tinsmith for forty cents apiece, thus enabling me to have three or four; some with projecting surfaces of clay for the abdomen of thin women, others with more or less hollow surfaces, according to the prominence of the abdomen or of any part of it. For instance, in a case where a large fibroid is projecting prominently, I apply an abdominal plate, very much hollowed out, which fits on top of the tumor like a cap. Any tinsmith can convert deep pie-plates into Martin's electrodes by soldering on to the rim a corrugated flange and attaching a binding post and screw to the bottom of the plate. A piece of rubber tape or bandage must be fastened around the edge to prevent the metal from burning. The current, having entered the body, we will suppose, by the abdom-

inal positive pole, pours through like a fine, invisible rain from every part of the clay in a direct line towards the other pole, which, we will say, is the negative one, in the uterus. If we could see it, it would look very like the spokes of a wheel running from the tire towards the hub. This will explain the condensation of force which takes place when the exposed surface of the electrode in the uterus is very much smaller than the surface on the abdomen, and, for this reason, the electrode in the uterus is called the active pole.

When it is desired to produce a cauterizing effect, either positive or negative, this can be obtained by making the exposed surface in the uterus exceedingly small; for Martin has proved that it requires fifty milliamperes to one square centimetre of surface during a period of five minutes in order to obtain a cauterizing effect. Where a cauterizing effect is desired, there is every advantage in making the surface of the internal electrode as small as possible; but, *in cases where we wish to obtain the greatest possible interpolary action*, we should make the internal as well as the external electrode as large as possible. Of course, if the internal electrode is connected with the positive pole, either gold or platinum must be employed, and the cost of these precious metals acts as a barrier to their being used. To overcome this objection, Apostoli has lately introduced graduated carbon electrodes containing one, two, three, four and more centimetres of surface, with which he is able to treat successively different portions of the intra-uterine mucous membrane. These carbon electrodes have another advantage in that they do not cauterize the cervical canal when it is our desire to only treat the lining membrane of the uterine cavity.

He has also invented another means of applying electricity to the interior of the uterus by means of a substance called *gelosin*—a semi-solid vegetable material, which is injected into the uterus so as to touch the whole mucous membrane. It does for the interior of the uterus what the clay does for the abdomen—enlarges the surface of contact.

Dr. Goelet, of New York, has recently introduced a steel sound which, owing to the peculiar manner in which it is prepared, is able to withstand the action of acids. As it is cheap and is a good conductor, it should supersede the costly platinum sounds and trocars which have hitherto been in use. I lay consider-

able stress on these points of diminishing the cost of necessary apparatus, as I have no doubt that the great expense of the armamentarium hitherto necessary has prevented many of the most wide-awake and progressive practitioners from possessing an outfit.

When the negative pole is used in the uterus, the ordinary intra-uterine sound, with a hole in the handle for connecting the wire from the negative pole, is all that is required. I have a number of them, curved to different degrees, always standing with their insulators in a carbolic solution, and I soon become familiar with the curves in the uterine canal of each patient, and choose the sound which suits her best. If you have only one sound, it soon becomes cracked by frequent bending. The negative pole is bathed in alkalies, which only brighten its polish.

In dysmenorrhea from stenosis of the internal os, the softening and dilating influence of the negative pole has been thoroughly established. In cases of fibroid in which the dysmenorrhea is a more marked symptom than the bleeding, I also prefer the negative pole in the uterus, which, I fancy, can be tolerated stronger than the positive. But when there is hemorrhage, the positive pole is decidedly indicated. Nevertheless, I have frequently observed the duration of menstruation to be rapidly diminished by the use of the negative pole. The positive pole also seems to have a more tonic effect on the system generally.

I now come to another point, namely, the necessity for irrigation before and after each application. During the first year I used this method, I spent a great deal of time in giving each patient a vaginal antiseptic douche, not only before but after every application; and perhaps, if one is apt to produce a lesion of the uterine lining membrane, it would be well to take that precaution. But having learned from several of my confrères whom I have induced to adopt Apostoli's method, that they had modified without bad effects the rigor of his instructions, I have for the last few months been contenting myself with swabbing out the vagina with a one-in-one-thousand bi-chloride solution before and after each application when the speculum has been used; or with ordering a weak sublimate injection to be given by the patient herself at her home before and after each application when the speculum cannot be employed.

As for the duration and frequency of applications, I have generally tried to give them every second day when I had time or as long as the patient was able to come. As a rule, the treatment of out-patients is often enough interrupted, so that it is unusual to be able to get, on an average, more than eight or ten applications a month. Most of my cases felt so well the next and following days after an application that they were anxious to come back. I have also noticed that the strength of current which a given patient could comfortably endure gradually increased with each application. No rule for the strength of current can be laid down. I give the patient all she can bear; but the moment I see by her face that she is beginning to suffer a little, I reduce the current, as I do not think anything is to be gained by giving a current strength which they would have any reason to dread. Apostoli says in his work on "Treatment of Endometritis" (p. 74): "Could we not, in order to render the operation still more harmless, if possible, and at any rate extinguish all operative sensibility, diminish the dose by lowering the intensity to thirty or forty milliamperes, for instance, and increase in proportion the duration of the application, in order to render always the same the sum of the electric outflow?" He answers this question in the negative in the case of endometritis, because in that particular disease it is the intense local action which is required. But in electrolysis I see no reason why one hundred milliamperes for ten minutes should not be as effective as two hundred for five minutes.

Indeed, I believe that some way will yet be devised for passing a comparatively weak current through the tumor day and night, and thus procure the electrolysis of the largest tumor in the course of a few days. As far as electrolysis is concerned, ten milliamperes during one hundred minutes would be as effective as one hundred milliamperes during ten minutes. I have devised a plan by which a small battery is placed under the bed, and the current is carried to the front and back of the tumor, but I have not yet been able to give this method an extended trial.

What about galvano-punctures? Although my experience with them has been limited, I have seen enough of them to be able to say that the less frequently they have to be resorted to the better, and then only at the patient's home or at the hospital,

but, with one exception, never at the office ; first of all, because they are exceedingly painful, and, second, because the after-condition of the patient is such as to cause considerable anxiety. In the case of Mrs. D., I tried galvano-punctures many times before I was able to pass the sound, and I found that anything more than thirty milliamperes could not be borne for more than a minute or two. I also tried them many times in the case of Mrs. T., who was unable to bear more than twenty milliamperes without an anesthetic. Besides the pain caused by the activity of the current being concentrated on so small a surface as the point of a trocar (for the electro-chemical action is always in direct proportion to the size of surface for a given milliamperage), there must also be taken into account the suffering caused by piercing the vagina and the sometimes very sensitive tumor itself. In many cases, the patient cannot bear to have her tumor touched, far less to have the trocar thrust into it. In any case when a puncture is to be made, it is well to have the tumor steadied by a firm hand on the abdominal wall, to press it down towards the trocar. Even when an anesthetic is employed and a sufficiently high current is turned on, say of two hundred milliamperes for five minutes, powerful contractions of the intestines are set up, which continue long afterwards, amounting in some cases to tormina. These may be diminished but not entirely avoided by augmenting and decreasing the strength of the current very gradually, and by administering a hypodermic of morphia previously. In the case of Mrs. T., who had an insuperable repugnance to the drug and refused to take it, these griping pains were terrible and lasted for two days afterwards. By keeping the patient in bed for two days after the puncture and applying emollient applications to the abdomen, and by giving antiseptic injections, the punctures are free from danger, and in Apostoli's hands are very successful. Martin, of Chicago, never uses them, and I much prefer the intra-uterine applications, which are much safer and hardly at all painful. Some of my patients have frequently borne two hundred and fifty milliamperes for five minutes without an anesthetic. They are safer because they may generally be performed without causing the slightest lesion of the uterine mucous membrane. It is now a rare occurrence for me to draw one drop of blood when introducing the sound, after the first application. But there is one case in which the intra-

uterine applications are powerless—when the tumor lies altogether outside of the line of the cone-shaped current, the apex of which is at the sound and the base at the clay. In three of my most obstinate cases, all the morbid growth in the anterior wall of the uterus was absorbed, because I could feel the tip of the intra-uterine sound under my finger on the abdomen. In one of them, Madame D., I then began to place the clay electrode on the back, so as to take in the posterior half of the tumor between it and the sound, with the result that the posterior half of the tumor also rapidly disappeared. I think this observation, if correct, important, as it would explain why I and others have failed in certain cases to obtain absorption of the whole of the tumor.

As Mr. Tait and Dr. Bantock, at a recent meeting of the British Gynecological Society, made the statement that a fibroid tumor could not be electrolyzed, that is, decomposed into its constituent elements, by any amount of current which it was possible to bear—two hundred milliamperes, for instance, for five minutes—I proceeded with my galvanometer and rheostat to an electro-plating establishment and interposed them in the circuit while the process was going on, when to my surprise I found that two and a half milliamperes was the greatest strength they ever employed. In fact, a copper article was completely coated with silver in five minutes with a current of that strength, which on being weighed showed that an equivalent of two grains of cyanide had been decomposed. Now, if two grains are decomposed by two and a half milliamperes in five minutes, four hundred and eighty grains would be decomposed in eleven minutes by two hundred and fifty milliamperes. So that sixteen applications of eleven minutes with a current strength of two hundred and fifty milliamperes would decompose one pound weight of the tumor. Whether a tumor outside of the body would lose that amount of weight in that time and with that current strength is a different thing; for in the living body, as is well known, there are the thousands of open-mouthed lymphatics ready to seize upon and carry away the products of decomposition, while in the dead tumor this would not be the case and the products of electrolysis would not be removed, so that the weight might not appear very different.

But, besides the electrolytic action of the continuous current, we have the remarkable effect which it has on the trophic

nerves—an action which would lead us to believe that the electric current is very similar to the vital current. These trophic nerves preside over the quantity of blood flowing in the vessels and the interchange of material in the tissues, as well as the absorption of foreign matter by the lymphatics. We know that it very much depends on the amount of nervous influence which the cells receive as to whether they shall keep up to the normal or degenerate. From the consideration of the history of the cases of fibroids which have come under my notice, I have been led to consider that fibroids are primarily due to defective vitality of the uterus accompanied by slowing of the circulation. And the difference between fibroids and areolar hyperplasia is only one of greater or less localization. Thus, if an impediment occurs to the circulation of the uterus—and we all know how great these impediments are in modern women, with their tight corsets, their heavy draperies, their engorged livers, their constipated bowels, and their want of exercise—if any of these causes prevent the blood from returning from the uterus, it is dammed back in the uterine veins and arteries, from which a fibro-plastic material exudes. If the absorbents are active, this may be carried off; if not, it will remain and after a time become organized into white fibrous tissue. This, small as it may be, is a foreign body and still further obstructs the circulation, so that it goes on increasing. At last it reaches a size sufficient for the uterus to take cognizance of, when, as is customary with that organ, the intruder is promptly expelled either towards the peritoneum or towards the cavity of the uterus in the line of least resistance, dragging with it the vessels from which it was first exuded, and from which it continues to receive its nourishment. In every case of fibroid which I have had under my care, the patient had always been constipated, and nearly all of them were of sedentary or intellectual occupations. Then, again, nearly all fibroids begin in the posterior half of the fundus, where the circulation is the most difficult. Now, the continuous current increases the nutrition of the part by hastening the circulation and interchange of tissues—in other words, acting as the best of alteratives. The exuded lymph goes back where it came from, by virtue of the renewal of the defective vital action. Certainly, *in the case of small fibroids, the continuous current never fails to remove them.* This reminds me of an observation which I wish to record, that in many cases of fibroids

there is a considerable edema in the outside cellular tissue, into which the finger may be made to sink by firm and continued pressure. Now, when a fibroid begins to diminish under electric treatment, the first thing to go is this edematous swelling; so that what seemed at first a single large tumor becomes resolved into a number of hard masses.

It is by the improvement in the circulation, and consequently of the nutrition of the part, that I would explain the marked relief of ovarian neuralgia by galvanism; for the best definition of neuralgia of which I am aware is that it is the cry of the nerves for better nourishment. But the relief of ovarian pain may be explained in another way. Those who operate for this condition tell us that they frequently find the ovaries and tubes compressed and bound down by a retracting plastic effusion; but, owing to the stimulation of absorption, these exudations are removed and the ovary is left free. The absorption of effusions by the galvanic treatment has been observed by writers not gynecologists, who have advocated this measure for the treatment of ascites.

In nearly every case of fibroid, there is an atonic condition of the walls of the intestines which permits of their being distended with gas. A few applications of the galvanic current tone up the intestines, which expel their gaseous, liquid, and even solid contents, with a corresponding diminution in the abdominal distention. In nearly all my cases, not only of fibroids but also of endometritis, in which electricity has been employed, the good effects of it on the constipation have been very pronounced.

This may perhaps be a good opportunity for repeating an opinion which I never miss a chance of expressing, that *constipation is one of the prime factors in the majority of cases of diseases of women*. I can hardly find a case in my note book which does not contain the note, "Bowels have always been confined." Surely I have not erred in teaching that the first step in any and every case of diseases of women is to get the bowels regular, so as to remove the obstruction to the venous circulation.

There is one thing about Apostoli's treatment which every one who has given it a trial is agreed upon, and that is that it never fails to arrest hemorrhage in fibroids and metritis. Now, this is all that Mr. Tait claims to do by removal of the appendages;

and although this operation in Mr. Tait's hands is almost devoid of danger, that does not make it easy or safe in the hands of the general practitioner under whose care the patients come. There is very little satisfaction to a woman, who has been confined to her bed for years with exhausting hemorrhages, to be told that she can have them stopped by an operation which has only a small death rate in the hands of Mr. Tait. Even if she could be operated on by him, she would not even then be sure of relief. On the other hand, several hundred cases are on record in which, several years after treatment by Apostoli's method, the arrest of the hemorrhage has proved to be permanent. I have the highest esteem for the wonderful diagnostic skill and manual dexterity of Mr. Tait, but I do not think he has been just to my friend and teacher, Apostoli, when he bases his disbelief in Apostoli's honesty and veracity upon the hearsay evidence of some of his Paris rivals rather than on his own personal investigation. How much better the course pursued by Sir Spencer Wells, who sent a trusty observer to spend a year with Apostoli in studying the value of the treatment, and, on his favorable report, going over himself to verify his observations, and then publicly giving Apostoli his hearty indorsement! Apostoli may be enthusiastic, as all inventors are, and some may have overestimated the value of his treatment; but the tendency of human nature to jog along in the old groove is so great that all his enthusiasm is more than needed in order to drag along the body of the profession in the march of so great an advance. I cannot close without protesting against the assertion that there is any danger connected with Apostoli's treatment. I have seen none during the two years that I have been using it many times a day. I had one narrow escape where nothing but a kind Providence saved me and the credit of the method. A patient who had been treated by me was so enthusiastic about it that she brought a friend, who was a great sufferer, to undergo the same treatment. By great good luck I had been called out of town by telegram a few hours before, and missed her. At eleven o'clock that night something gave way inside of her, and in a few hours she was dead. I have no doubt that if I had even seen her when she came to me I would have had to shoulder for all time one death under Apostoli's treatment. I have not only had no accidents except the one miscarriage which I reported, but every patient has felt

better after the very first application, and I candidly maintain that I do not see how a single death can ever be justly attributed to the method. It is the simplest and safest treatment of which I am aware, and it does not mutilate the patient for life, as do other methods of treatment, but it actually restores to her faculties and functions of which she had been previously deprived. I cannot trespass so much on the space of this JOURNAL as to report even briefly all my cases treated by this method, but I append the barest outline of a dozen cases taken at random from my note book :

CASE I.—Mrs. S., 39, widow, artist ; sent by Dr. Kennedy. Fibroid tumor since eight years. Pressure symptoms had rendered her helpless and hopeless. After twenty-four applications during two and a half months, circumference of abdomen reduced six inches, and she is able to do all her work and enjoy life. Absolutely free from any subjective symptoms.

CASE II.—Miss W., 40, single, cook; sent by Dr. Reddy. Hopeless invalid, fibroid completely filling pelvis. Dysmenorrhea and pressure symptoms on bowels and bladder agonizing. After three months' treatment, able to start a large boarding house, for which she caters and cooks, and enjoys robust health one year after treatment was concluded.

CASE III.—Mrs. L., my own patient. Endometritis and perimetritis. Cured by ten applications of positive pole.

CASE IV.—Mrs. P., 31, nullipara; sent by Dr. Clowes, of Winnipeg, with rapidly growing fibroids causing great pain, rendering her helpless. Growth arrested by thirty-five intra-uterine applications. One year later is in good health, able to do her own work, and goes tobogganing.

CASE V.—Miss C., 41, virgin. Metritis and ovaritis. Cured by nine applications of positive pole.

CASE VI.—Miss McP., 41, virgin, cook; sent by Dr. Reddy. Large, rapidly growing fibroid, causing intense pain from pressure symptoms. Pain removed and tumor diminishing after forty-five applications. Has resumed work as cook in a large family.

CASE VII.—Mrs. D., 46, married, nullipara; brought by Dr. Jeannotte with very large fibroid completely filling pelvis and extending above umbilicus. Had to be kept under morphia for eight days out of every month for last ten years on account of dysmenorrhea and pressure symptoms. After sixty-five applications, tumor reduced to size of an orange and patient absolutely cured of all symptoms. Six months after cessation of treatment, Dr. Jeannotte reports to me that she menstruates

like a young girl, free from the slightest pain, and enjoys life as she has not done for sixteen years. He also says *that the tumor has completely disappeared.*

CASE VIII.—Mrs. H., carried into my office by Drs. Cleroux and Caisse and her husband, remaining in a faint for half an hour afterwards. Had a large, fibrous polypus completely filling the vagina, which for a variety of good reasons I was not allowed to remove with the snare. . Has frequently fainted in bed from hemorrhage. After seven positive galvano-punctures, polypus shrunk to half its size, and patient regained color and strength, and hemorrhage ceased. Saw her four months afterwards in robust health.

CASE IX.—Mrs. X., sent to me by kindness of Dr. Proudfoot. Had a six years' history of hemorrhages due to a fibroid, which compelled her to remain in bed ten days every month, during which she would often faint if she raised her head from the pillow. After twenty-eight positive intra-uterine applications, menstruation reduced to four days, no longer obliged to remain in bed during the periods, able to eat and sleep well, and able to go long walks while the flow was going on.

CASE X.—Mrs. N., sent to me by Dr. Munro with cancer of the cervix, causing incessant metrorrhagia which had lasted one year in spite of the best treatment. The slightest touch on cervix would cause granulations to bleed profusely, and the tissues were so soft and friable that a tenaculum would not hold in the cervix, which latter is so hypertrophied that it will barely enter between the extended valves of a Cusco speculum. After six applications, no pain, no hemorrhage; patient eats and sleeps well and able to work. Swelling of lips of cervix gone so that the two lips can be nicely approximated, revealing a very deep laceration which was the starting point of the disease. Decided cancerous cachexia beginning to disappear. Patient declines further treatment, considering herself cured.

CASE XI.—Mrs. G., sent to me by Mrs. Dr. Fuhrer with a large, rapidly growing tumor. Suffers terribly from pressure symptoms and want of sleep. After first application, pain left, and has not since returned, three months afterwards. Menstruation is now painless and lasts only three days instead of ten as formerly.

CASE XII.—Miss B. Endometritis from cold; severe pain in womb and ovaries, with menorrhagia and dysmenorrhea. Eight applications of the positive pole cured the pain, stopped the leucorrhea, and reduced the period from ten down to four days.

I regret exceedingly that the limits of space prevent me from submitting the reports of these cases in full as they are lying before me; the reader would be interested to hear their his-

tories and also the difficulties that had to be surmounted at the beginning of the treatment in some of them. But as these details are not essentials, they must be left out for the present.

There are a great many others, which I shall tabulate on a future occasion, of dysmenorrhea, ovarian, tubal, and uterine; of pelvic pain due to pelvic exudation; of ovarian neuralgia; of varicocele of the broad ligaments; of prolapsus of the ovary and uterus from passive congestion of these organs—which have been either cured or relieved so much that the patient was satisfied. I do not deny that I have had one failure and a few partial failures, but I maintain that even these are rather owing to want of experience, due to the newness of the method, than to the inability of electricity to remove the pathological conditions. Before the Ninth International Congress I stated that electricity was useful in every disease of the female generative organs with the exception of ovarian tumors and malignant disease. But I believe that at the next Congress I will be able to remove epithelioma from the list of exceptions, having recently had sent to me a hopeless case of cancer of the uterus on whom I determined to try the continuous current, and in whom half a dozen applications of the positive current have made such a difference in the whole aspect of the case that the patient believes that she is cured, in spite of my assurances to the contrary, and I am almost convinced myself that the disease has been arrested. What a reward for all Apostoli's untiring efforts to introduce his method, if it should be found that it was reserved for his treatment to cure the one hopeless disease of woman—cancer of the uterus!

In conclusion, let me urge those who are working with this method to allow nothing to discourage them, for every day they will learn better and better to overcome the difficulties which must always beset the way of those who start out on a new path. It was Apostoli's courage alone which was able to rescue this powerful treatment from being buried alive for another decade, and which has placed him at the head of the great and noble army of conservative gynecologists.

EXTRA-UTERINE PREGNANCY.¹

BY

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I THINK that no one subject has occupied more of professional attention during the last year or two than extra-uterine pregnancy; and as it has never been brought before this Society for discussion, this appears to me an opportune moment to participate in the consideration of a question which is claiming so much of the time and talent of medical societies at home and abroad.

Dr. Smith, a few weeks ago, presented a post-mortem specimen which would serve better as a text for discussion than the one I shall present, although mine is not wanting in interest, and it may serve to illustrate several points in the course and management of this but imperfectly understood subject.

I regret that I am unable to give a complete and connected history of my case, but, as the patient came under my care at about the end of her troubles, I can only relate what she says of her condition previously, without vouching for its accuracy in its details.

Mrs. S., æt. 22, a handsome, well-developed woman, had been married three and a half years when she consulted me in April of last year. She had been well and regular during her married life up to May, 1887, when her menses ceased. Her period was due on the 15th of May. Soon after this time she experienced morning nausea and general malaise, and frequently during the night had attacks of nausea and sometimes vomiting.

This condition continued till July 10th, when she was taken with excruciating pain in lower abdomen, the attack coming on whilst she was in a reclining position reading. She was confined to bed for three or four days. She had about three of such spells at intervals of three weeks, and was confined to bed two or three days after each, and remained sick and complaining between the attacks. In September she had the last, which was much worse

¹ Read before the Washington Obstetrical and Gynecological Society, March 8th, 1889.

than the previous ones; she was extremely prostrated and was confined to bed for a longer period. At this time she first noticed abdominal enlargement.

She had during the summer—she was not exact as to time—a discharge of shreddy or membranous pieces from the vagina.

Two or three physicians had seen her in her various attacks, but it does not appear that any diagnosis was made further than cramp or colic. When better, about three weeks later, she went to California. She had a slight show of menses in October. She consulted a physician in Stockton, who diagnosed pregnancy.

She remained in California during the winter under the care of Dr. G——, who in the meantime concluded that she was not pregnant, but had a uterine fibroid. He examined her several times instrumentally. She had more or less abdominal pain and vesical irritation.

In the early spring she returned to Washington, and consulted me in April, 1888. I examined her carefully and found a tumor about the size of a large orange, or perhaps a little larger, low down in the abdomen and to the left side. Her principal annoyance was with the bladder, micturition being very frequent. Her general condition appeared good, but both she and her husband declared that she had lost considerable flesh. My opinion was that she had ovarian cyst or uterine fibroid, and I advised her to await further developments.

As in May there was a sudden increase in the size of the tumor and considerable abdominal pain, I asked Dr. Busey to see her with me. We examined her carefully, using the sound, but we were unable to determine satisfactorily the nature of her case, although we considered the possibility of ectopic gestation. Symptoms of cystitis increased in violence, and our attention was principally given to alleviation of this condition. Her urine was thick and loaded with sediment, and she remarked one day that she had been passing quite a number of pieces of hard substances, one of which she preserved. It was the small piece I here present. I regret very much that I did not pay more personal attention to her urine during this time, as I might have procured such a number of pieces as to make the specimen more interesting and satisfactory from a diagnostic point of view; but she declares that she passed at least a dozen pieces and much thick, tenacious matter.

By June 1st she was much better; the abdominal tenderness had subsided and the tumor much diminished in size. June 13th, has just passed through menstrual period and feels almost well.

I took the piece she had passed to Dr. Gray, who examined it under the microscope, and he declared without hesitation that it was undoubtedly bone, but was unable to state which it was.

I think there is no doubt that this was a case of extra-uterine pregnancy terminating in discharge of the fetus by ulcer-

relative process through the bladder. In works referring to this subject, the bladder is mentioned as one of the routes of escape of the fetus; but I have not looked up the subject, and am therefore unable to state how many such cases are recorded or the symptoms accompanying the process.

It appears from the history of this case that the first attack occurred about the eighth week and the last about the fourth month. What took place during the various attacks, four in number, it seems difficult to conjecture. As rupture in tubal pregnancy frequently occurs about the eighth week, it is possible that this took place at her first painful symptoms; and yet it appears improbable that she would have recovered so readily from so serious a mishap. Or the rupture may have been only partial, and this occurred again and again till the last, in September, when it was complete. I must admit my inability to explain intelligently the course of the case, but I have at least the consolation of knowing that the cure is not by any means unique in this respect, and that I am not alone in being unable to interpret correctly the incidents of this condition.

I saw my patient a few days ago. She is well; the tumor has disappeared, and she menstruates regularly. She is unhappy only because she does not become pregnant, and seems willing to run all risks for the sake of a child.

Now, what are we to do in similar cases? This woman appears to have had, according to her account, all the usual signs of pregnancy, and at the eighth week the symptoms of rupture of the tube. Should she have been operated on then or at any of her subsequent seizures? Of course it is impossible to give a positive affirmative answer in this particular case, because we are ignorant, in a measure, of the severity of the seizures and of the difficulties of making a correct diagnosis which may have been encountered; but I think that there cannot be two opinions concerning the correct practice when these points are clear. An immediate operation under such circumstances is imperative and gives the woman almost her only chance of life. I say almost, because, as this case proves, a woman may recover—and many have recovered—but from every surgical point of view it appears inexcusable to allow one to run such risks when a timely interference might relieve her of all present and future trouble with but little more danger to

life than an oöphorectomy, the additional danger being loss of blood and shock.

But the ideal operation for ectopic gestation is that before rupture takes place. I appreciate the fact that this is a difficult question to determine, but I contend that the difficulty is merely one of diagnosis, and I also hold that obstetricians and abdominal surgeons should diminish these difficulties. If the surgeon makes out the tumor and the obstetrician the signs of pregnancy, I can see no reason why there should not be accord in the only reasonable and rational plan of treatment suitable to the case. But there is not, and obstetricians are still discussing the best methods of killing the fetus *in situ*, such as evacuating the sac with trocar and canula, injections of lethal fluids, etc., and the latest is the use of electricity for that purpose, which is now being employed in numerous cases. I should say that they are all alike unscientific, as they do not protect the woman from future trouble in the majority of cases, and are not devoid of danger in themselves; whereas the operation of extirpation is simple, successful, and final, especially when the case is tubal. Where the pregnancy is interstitial, I admit that there are grounds for doubt about the best method of interference.

To Tait is due the credit, more than to any other, of establishing the advantages of the early operation, by bringing it so prominently before the profession with his large number of successful cases.

If the operation be deferred for any reason, it is seen that the woman runs great risk of sudden rupture and death, as was the case with Dr. Smith's patient. Many such accidents, of course, must happen, for a large percentage of cases reach this fatal termination under circumstances in which no diagnosis can be made; but it is clear that his case should have been operated on immediately with hope of success, although the doctor says her condition was such as to preclude the question of interference at the time he saw her. But certainly one would be justified in operating in extremes, if there were sufficient reason to suspect the true condition.

It is thought that if rupture does not take place before the fourth month, pregnancy frequently goes on to full term, when, spurious labor occurring, the child dies; and if the mother survives, other dangers are encountered. Atrophic changes may

follow in the fetus, such as infiltration of calcareous matter or its transformation into adipocere ; or decomposition with suppuration and abscess, with discharge of contents, most frequently into one of the hollow viscera, as bowel or bladder ; or it may rupture through the abdominal wall. In all of these terminations there is great danger to life of the mother. It is estimated that three-fourths of all cases die, more than one-half from rupture of the sac.

It may be said then that, in all cases in which the diagnosis can be made out, the operation should be performed without delay, and also the immediate operation should be resorted to in all cases of rupture when this condition can be diagnosed. It appears that up to the fifth month of pregnancy the rule should be to operate, the child being alive, but between the fifth month and period of false labor operation is not advisable.

It is proper also to operate after false labor when the child is dead and the amnion absorbed, and in all cases of suppuration ; but when the fetal remains are quiescent, operation is not urgent. In all cases and conditions dangerous to the mother, interference is imperative.

The early operation, as has been said, is simple, easy, and successful, the sac and contents being removed together as in an ordinary ovarian cyst.

When the sac has ruptured, of course the danger is greater ; but when performed without delay, the operation is usually attended with success. The ovum has to be extracted, blood cleaned from the peritoneal cavity, and the sac removed.

After the end of the fourth month, the dangers increase and difficulties are encountered when the fetus is viable. Here it becomes unsafe to attempt the removal of the sac with its contents, and another line of practice must be adopted. The safest plan is to incise the sac, when there is one, remove the fetus, cleanse the cavity and stitch the edges of the sac to the abdominal opening, and leave the placenta to separate naturally. In some cases, the removal of the placenta may be proper, but never when there is no proper sac, and the greatest care should be exercised to avoid wounding it. The after-treatment locally consists in free drainage and washing out the sac.

The operation for extirpation after term is admitted by all to be attended with great dangers and difficulties. The adhesions are often so great that only a part of the sac can be extirpated.

the remainder being attached to the abdominal wall and thoroughly drained. I have only alluded to the difficulties likely to be encountered in the late operations, without any attempt to describe them, as it would take much time, and, besides, has no special bearing upon the case I report.

The condition of ectopic gestation in Mrs. S.'s case appears never to have been made out, and I doubt whether the most experienced could at any time have been so sure of a diagnosis as to have felt justified in operating. After she came under my observation, upon one occasion only were symptoms of such a character as to indicate anything more than an ovarian or uterine tumor. This was when Dr. Busey saw her with me the second time. There was apparent sudden enlargement of tumor, with abdominal pain and some distention, but her general condition was so favorable that no surgical interference was thought of by me at the time. In a few days these symptoms began to subside as the vesical irritation and discharge increased.

It is by no means clear to me what took place at this time to cause these symptoms. The only explanation I can suggest is that, as the ulcerative process made an opening into the bladder, urine passed into the sac as the fetal contents passed downwards; as soon as the sac was emptied, it began to contract and close, and was thus relieved of the irritation of the urine.

I am compelled to admit that this is not a forcibly presented case of extra-uterine pregnancy, but, after much thought expended upon it at the time and since, I see no other interpretation of her symptoms. It is fortunate I succeeded in getting the small bone, for without that I should have had no case. At least there would be too much doubt surrounding it to warrant its being presented here. As it is, the inference, if not absolute certainty, is in favor of our diagnosis.

A HYDROCEPHALIC MONSTER WITH CEREBELLUM ENORMOUSLY DEVELOPED OUTSIDE THE CRANIAL CAVITY.

BY
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(With three woodcuts.)

PATIENT, German, age 29. Had two healthy boys, one three years, one fifteen months previous; both born easily; mother cared for by a midwife.



Labor came on early in the day; pains irregular and light until noon. I was called at 3 P.M. The abdomen was large and round, pains frequent, os thoroughly dilated, a soft mass protruding; to touch, it resembled placenta, maternal side. Ether was being given when a single prolonged pain forced the presenting body down into the vagina until it protruded at the vulva. The next pain ruptured the mass; watery blood spouted several feet; the sac collapsed, and at its attachment could be felt a small head. Slight traction brought the head well down; another pain forced the child into the world.

Child, female, weighing eight pounds, body well developed, limbs normal. Face small, eyes large and protruding; forehead poorly developed; from the superciliary ridges the head sloped flatly backward and upward. No opening of anterior fontanelle.

From the occipital region was a large mass formed externally by a continuation of the scalp above and the integument of the neck below. This was the presenting mass giving the feeling of

placenta covered by membrane. In the centre of this mass was a thin membrane that ruptured at time of delivery, allowing blood, water, and shreds of fleshy material to escape. Hair grew on its surface continuous from the scalp above and the neck below.

Shortly after birth, a finger was passed through the ruptured membrane, through the posterior fontanelle, into the small cerebral cavity, apparently empty except for a little fluid. The finger gave almost no inconvenience except when pushed into the foramen magnum; then the child stopped crying, breathed spasmodically, gave convulsive twitches of the limbs, and became blue. As soon as the finger was withdrawn, breathing became

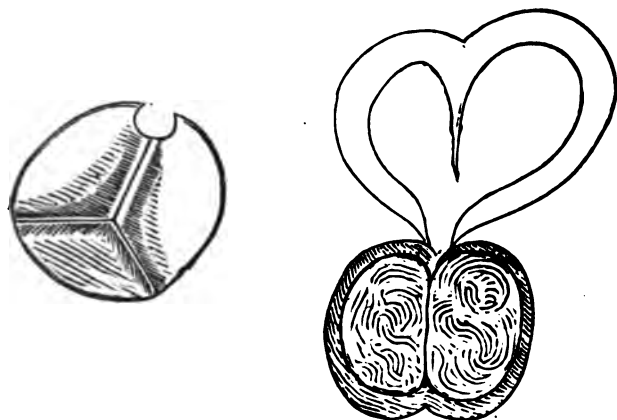


FIG. 1.

FIG. 2.

FIG. 1.—Showing circular posterior fontanelle, absent anterior fontanelle, flat cranial bones, angles at suture unions.

FIG. 2.—Showing comparative size of mass, sacs in its interior, pedicle coming out of fontanelle posterior to hemispheres, etc.

regular, crying continued, and the body regained its natural pink hue.

As a possible cause of the monstrosity may be given the following: Twice during the early months of pregnancy the mother was frightened by seeing her child fall; through the later months she grieved constantly over the wayward course of an unmarried sister. The pregnancy from an early day differed from her other two. There was more sickness, more "bad feeling," but less vomiting; this time she menstruated regularly at least four times, not knowing pregnancy existed until she felt motion in utero.

Autopsy.—Head opened in the usual way; no anterior fontanelle and no frontal suture. The coronary and sagittal sutures were quite firmly united by cartilage. The cranial bones were flat, meeting each other, forming angles at the suture junctions. The posterior fontanelle was large and very nearly circular (Fig.

1). The cerebral hemispheres were small, the right slightly the largest; together they would weigh three ounces.

Just posterior to the cerebrum was a large pedicle that passed through the posterior fontanelle into the sac (Fig. 2) at the back of the head, where it widened into two large, hollow lobes; inside each was a smooth-lined cavity containing bloody serum. The substance of the lobes around the cavities was like that of healthy brain, well supplied with vessels and inclosed in membrane continuous with the dura mater. The medulla was small; around it and in the foramen magnum there was so much liquid and clotted blood it was difficult to make it out. The optic nerves, though small, could be easily seen.

The large mass back of the head contained the cerebellum, developed to many times its normal size; the space inside the skull usually occupied by it was filled with bloody serum.

The abdominal and thoracic viscera were abnormal in that the lungs were partly inflated, the heart flabby and full of clots, the foramen ovale patent.

THREE CASES OF DIPHTHERIA IN WHICH PAPOID WAS USED.¹

BY

M. F. CUTHBERT, M.D.,
Washington, D. C.

HAVING witnessed the interest excited in this Society about a year since by a paper which one of our members, Dr. J. R. Bromwell, read upon the subject of papoid in diphtheria, and believing that any facts in regard to the treatment of this common affection are of considerable practical value, I have been led to adopt the same subject for my paper this evening. I have been more ready to do this because I realize that as a society we can obtain the maximum amount of information upon any one subject only by its being discussed from year to year by the individual members. By a systematic recital of experience we can, in this way, best learn those agents and measures which are of real value and those whose happiest effect is by their exclusion. The use of papoid as a remedial agent in diphtheria is so recent, and the results obtained from its use by

¹ Read before the Washington Obstetrical and Gynecological Society, March 15th, 1889.

Dr. Bromwell are so different from those obtained by myself, that I trust this evening's discussion may enable us to say whether we can or cannot use it with advantage in the treatment of diphtheria. Any description of the drug itself would, I believe, be superfluous, and I shall simply beg leave to give the practical results which I obtained from its use in three cases where, beyond all doubt, true membrane was present. I shall not refer to several cases where I suspected diphtheritic membrane to be present, and in which I used papoid, because in these cases a positive diagnosis was, owing to the absence of other important symptoms, not possible. That many cases of follicular tonsillitis are diagnosed and treated as diphtheria I believe we all realize; and we at the same time know that cases of diphtheria where slight local lesions exist are called, and treated as if they were, follicular tonsillitis.

I desire particularly to call attention to the fact that in one of these cases—the first—a small patch of membrane remained in position for at least two weeks, and that this occurred despite the fact that the best agents for dissolving membrane which we know of were vigorously applied. Whether this spot of membrane was or was not being constantly dissolved and reformed, and whether it afterward served as a source of infection for another and distant part, I trust some member of this Society will be able to say, after the history of the case has been given.

CASE I.—J. K., white, aged 9 years; type, blonde; appearance strong; previous history and family history good. This child was first seen on the afternoon of November 12th last. She had been complaining for a day or two of headache (frontal), loss of appetite, weakness, and diarrhea. She had for the first time complained that morning of her throat being sore. On examination, the cervical and submaxillary glands were found to be greatly swollen and very tender; temperature, 102.8°; pulse, 140. Both tonsils and the wall of the pharynx were covered with membrane of a grayish color. There was a decided fetor to the breath, and a peculiar odor which I have observed in other cases, some of them not diphtheria, which resembles the odor of chloroform, and the cause of which I have never been able to ascertain.

Directions were given for the child to be put to bed at once, to be given liquid diet of a nourishing nature and at frequent intervals. In addition cold compresses were directed to be applied to the neck, cracked ice to be taken *ad libitum*, and a tablespoonful of whiskey to be administered every two hours. Besides the above, five grains of calomel were given.

The patient was next seen at 9 o'clock the same night. At this hour, the thermometer showed a temperature of 101.5° Fahr., and the pulse had fallen to 130. The calomel had acted several times. The liquid diet, stimulants, and cold compresses were ordered to be continued as before, and I applied a paste, composed of a five-grain powder of papoid rubbed up in a little glycerin, to the infected area. The child's mother was shown how to use these powders, and was directed to apply one every half hour until my next visit. The next day (November 13th), the patient was seen at 11 o'clock in the morning, when she was found to have a temperature of 100.2° Fahr., and a pulse of 126. There was little or no perceptible change in the appearance of the deposit upon the throat. At 7 o'clock the same evening, the temperature was 100.4° Fahr., the pulse 116. The deposit upon the throat still remained as before. Papoid had been applied every half hour during all this time. I directed a continuation of the same treatment, and in addition prescribed ten drops of the tincture of chloride of iron to be given every two hours. On the 14th of November, at 11 o'clock in the morning, the temperature had fallen to 98.8° Fahr., and the pulse to 96. Appearance of throat unchanged. Treatment continued. No change in appearance of parts could be detected the same evening, but the same treatment was persevered in. November 15th, 11 A.M., temperature 99° Fahr., pulse 82. That evening the temperature was 99.5° Fahr.; the pulse, 108. On the following day, the child was so ill that I was compelled to see her three times. The temperature at 11.30 A.M. was 101.6° Fahr., and the pulse 126. At 4.30 P.M., temperature was 102.4° Fahr., pulse 140. At 7.30 P.M., temperature 101.2° Fahr., pulse 130. The previous treatment was persevered with, and, in addition, a seidlitz powder was given. November 17th, at 11.30 A.M., the temperature was 99° Fahr., and the pulse was 96. At 8 P.M., the thermometer registered 99.4° Fahr., and the pulse had reached 110. The tonsils were now almost free from membrane, and portions of the pharynx were also clear. No change in treatment was made, but the papoid was procured from another pharmacy, as I feared the possibility of having secured an inferior specimen of the drug. The next day, November 18th, the temperature remained normal throughout the day, and the pulse did not exceed 90 per minute. The same evening I began to use a solution of trypsin, and, alternating with papoid every half hour, I continued to apply it for the following twenty-four hours. The throat now soon became clear of membrane, except at one point below the right tonsil. At this spot, a patch of membrane about the size of my thumb nail remained, and for the next fortnight, despite the frequent application of both papoid and trypsin, it maintained its position without change. During this time, the temperature remained normal, and the pulse, while occasionally irregular or intermittent, was seldom higher than 96 per minute. Dr. C. W. Richardson and Dr. J. R. Bromwell had

in the meantime seen the case, and both agreed that the patch which remained upon the throat was diphtheritic membrane. At their suggestion, we made a faithful trial of steam by inhalation, of sprays, and in addition gave iron, hydrochloric acid, and chlorate of potassium internally. All of this was done without any appreciable effect being witnessed. So affairs continued until the evening of November 28th, sixteen days after the case had first been seen. That evening I was summoned by telephone to see the child at once. On reaching the house, I found that, an hour or two previously, symptoms of croup had appeared, and to one of these attacks the patient had almost succumbed. I found her with constant dyspnea, a bluish discoloration about the lips, face, and hands, and with symptoms of great restlessness and anxiety. I remained at the house all night, and, despite the treatment given, thought several times that I would be compelled to perform tracheotomy. Hot poultices were kept applied to the front of the neck, steam inhalations given, and papoid in solution was sprayed into the larynx every fifteen minutes. For the next forty-eight hours, the child's condition remained critical, but after that the symptoms of laryngeal obstruction disappeared. The spot of membrane under the right tonsil still continued as before, and it had only entirely disappeared by the 5th of the following month (December), and only after it had been subjected to daily applications of the undiluted tincture of the chloride of iron. The child's general condition remained excellent throughout the attack. As a sequel there occurred some paralysis of the muscles of the right side, as well as those of the left palate, but this paralysis was not of long duration and was not progressive in character. My experience in this case induces me to ask the Society three questions, as follows: (1) How long can a spot of diphtheritic membrane remain upon the throat? (2) Was this spot the source of infection for the larynx which afterward occurred, or was that due to an independent and systemic source? (3) Did papoid have any effect in causing the disappearance of the membrane from its other situations, when it failed, after the most vigorous trial, to have the slightest effect upon the obstinate patch of membrane before referred to?

CASE II.—A gentleman, aged about 29 years; type, blonde; previous history good; had been more or less unwell for a week or two prior to his present attack. Was first seen by myself on the morning of January 11th last. He was then sitting up, but complained of violent headache and sore throat. Had suffered from a severe chill an hour or two before. His temperature was 104° Fahr., pulse 142; face flushed; cervical and submaxillary glands all enlarged and very sensitive to pressure. An examination of his throat showed the presence of membrane over both tonsils and walls of pharynx. This patient was put to bed at once, directed to have liquid diet every two hours, and two table-spoonfuls of whiskey were ordered to be given with the same frequency. Five grains of calomel were prescribed, as in case

No. 1. At 9 o'clock in the evening, the temperature was 103° Fahr., pulse 120 and weak. I now began the use of papoid, and had it applied to the membrane every fifteen minutes. Having from experience learned that glycerin was not a good vehicle for papoid, as most of the latter will remain in the brush when rubbed up with it, I used water as a solvent. By using the latter, every particle of the papoid can be applied to the membrane. It has the additional advantage of not making it difficult to clean the brush after using.

On January 12th, at 11 A.M., I found the patient with a temperature of 102.4° Fahr.; pulse 120, but stronger than it was on the previous evening. There was no marked change in the appearance of the throat, but the intensely disagreeable odor to the breath which had at first existed had disappeared, and the patient expressed himself as being much more free from pain about the throat. At this time, as when at first seen, intense redness and congestion were observed at every point in the pharynx where the view was not obstructed by membrane.

No change in treatment was made. The case was seen at 8 o'clock the same evening, when the thermometer showed a slight rise of temperature; pulse 122. The patient had had six or eight free movements of the bowels during the day. On the following morning, January 13th, there were indications that the membrane was disappearing, but the general condition of the patient was not so good; his temperature in the morning being 103° Fahr., the pulse 130 and very weak and irregular. I increased the stimulant (whiskey) to three tablespoonfuls every two hours, and continued the papoid as before. At 8 P.M., the temperature was 100° Fahr., the pulse 100, regular and stronger. Same treatment was continued. January 14th, at 12 M., for the first time since seen, there was an absence of fever; pulse 96 and of good volume. Portions of the membrane had disappeared, leaving scattered patches over the walls of the pharynx. The patient at this time showed marked evidences of anemia, and I directed that he be given a liberal amount of beef juice each day. At 9 P.M., the temperature was 99° Fahr., pulse 96. I now prescribed a mixture containing chlorate of potassium, hydrochloric acid, and tincture of chloride of iron. The throat still showed signs of the intense congestion before referred to, but the membrane had perceptibly lessened in amount.

By the morning of January 15th, all membrane had disappeared except a small round patch on the left side of the pharynx and a larger and more quadrilateral-shaped remnant on the right side. On the next evening (January 16th), all membrane had disappeared from the throat except the patch above referred to, which still retained its place on the right side of the pharynx and extended down almost as far as the eye could follow. Frequent applications of papoid to this spot both by brush and spray seemed to have no effect, so on the following day (January 17th) I began the local use of the undiluted tincture of the chloride of iron. At

the same time I began to keep the air of the room moistened by boiling water, and in this water I always kept some oil of turpentine. The remaining portion of membrane held its position in spite of treatment, and it was not until the 22d of the month—eleven days after I had seen the first case—that it had entirely disappeared. At this time the patient's general condition was excellent, and he made a rapid and uneventful recovery. In connection with this case, I wish to say that the patient's wife was expecting to be confined at any time, and that I was on that account obliged to adopt the strictest antiseptic precautions. These consisted in the removal of every object from the sick-room which was not considered necessary, in keeping the vapor of turpentine constantly present, and in having cloths sprinkled with carbolic acid hung about the room. Early in the morning of January 18th, the wife of this patient was delivered of a son, and I am pleased to state that neither mother nor child suffered from the proximity of a contagious disease.

In this case I can again ask, Did papoid aid in the early disappearance of the greater portion of the membranous deposit, and, if it did, why should the remaining portion prove non-susceptible to its action? In both the first and second cases, I believe the application of the tincture of the chloride of iron, and not the papoid, was the cause of the disappearance of the remaining membrane.

CASE III.—Florence O., aged 11 years; mulatto; appearance frail. Was first seen at my dispensary service at the Children's Hospital on January 25th, 1889. Complained only of pain in abdomen, and headache. Realizing the value of examining the throat in children, as well as in infants, even when soreness of that part is not complained of, we made no exception in this case, and the result of the examination amply proved the value of the proceeding. The cervical and submaxillary glands were all found to be enlarged. The tongue was heavily furred white, and had upon it four large ulcers, two of these being on the left side, one on the right, and the remaining one in front. Both tonsils were covered with grayish membrane, and a band of the same extended across the posterior wall of the pharynx. The temperature was not taken. Pulse 130, weak and irregular. The girl presented marked symptoms of anemia. As in the previous cases, I began the treatment by prescribing five grains of calomel. Absolute rest in bed was enjoined, and in addition she was directed to have a wineglassful of milk with three teaspoonfuls of whiskey every two hours. Besides this she was allowed to have as much solid and liquid food of a nourishing nature as she cared to take.

Case was next seen at 1 o'clock in the afternoon of the following day. No appreciable change in symptoms could be detected other than a diminution of heart rate to 108 per minute. No change of treatment was made at this time except to increase the amount of stimulant to a tablespoonful of whiskey every

two hours. At 5 in the afternoon of the same day, I applied five grains of papoid in solution to the membrane, and directed the mother to make the same application every fifteen minutes until I next called. A gargle containing one drachm of chlorate of potassium to a half pint of water was directed to be used every half hour. This latter was ordered more with a view of keeping the throat clean than for any other reason. All unnecessary articles of furniture and hangings were removed from the room. The air of the apartment was kept saturated with the vapor of turpentine, a half ounce of turpentine being added to a quart of boiling water for this purpose. Carbolyzed cloths were also kept suspended about the room.

January 27th, 12 M.: Temperature 100° Fahr., pulse 107. Little or no change apparent in appearance of throat. The condition of the room not being cleanly, I had all the woodwork, floors, etc., washed with a solution of turpentine. Treatment continued. Four P.M., condition of patient about the same as when last seen. The former treatment was continued.

January 28th, 1 P.M.: Temperature 99° Fahr., pulse 96. The tonsils were almost clear of membrane, but the band of membrane extending from one tonsil to the other across the posterior wall of the pharynx was unchanged. The tongue was cleaner. Two movements of the bowels had occurred since last seen, and considerable pain in the abdomen had been complained of during the night. At 9.30 P.M., the pulse was 96; temperature was not taken. In addition to a wineglassful of milk with a tablespoonful of whiskey which had been given every two hours, the patient had taken eggs, boiled rice, oysters, and other nourishment during the day. The tongue was again heavily furred, and the child's mother was directed to cleanse it several times a day with a wet rag and lemon juice. The ulcers on this part remain unchanged. No change in appearance of the throat is yet to be seen. A tablespoonful of castor oil was given, the papoid applications and other treatment were ordered to be continued, and the popular combination containing chlorate of potassium, tincture of chloride of iron, and hydrochloric acid was given.

From this time (January 28), the condition of the parts rapidly improved, and four days later there was no trace of membrane upon the throat.

In this case, as in the two preceding ones, I have some doubt whether the papoid caused a removal of the membrane. I regret to add that I have not seen this case since a day or two after the throat became clear of membrane, so I am unable to state whether any paralysis ensued.

My experience in these three cases has strengthened my belief in the truth of some deductions made in previous ones. One of these is that we may have marked local lesions without any prominent local symptoms being complained of; another,

that so long as there is the slightest quantity of membrane remaining upon the throat, we have reason to fear that fresh deposits may occur. That the clinical thermometer is not of any great practical value in diphtheria I believe to be true. It is of far more importance to have a close supervision of the pulse. Of the great value of alcoholic stimulants in these cases there can be no doubt, and the earlier we begin their use the better will our results be. If we were limited to the use of any one agent in the treatment of this disease, alcohol would, I believe, be the most useful one we could select. A moderate dose of that much-abused drug—but none the less valuable for that—calomel, given at the commencement of the disease, will go far toward keeping the digestion in good condition. The demand for a free administration of nourishing food in these cases is imperative, and, next to milk, a liberal supply of beef juice will best fill this want.

As to how the disease was contracted in cases No. 2 and 3, I am unable to state. In neither of these could I learn of any other cases of the disease in the neighborhood. Case No. 1 occurred in a locality where the street had been ploughed up and allowed to remain without being paved for several months, and during that time a liberal amount of refuse matter had been deposited upon it. There were several other cases of diphtheria in this neighborhood, and two of them, in the same row where my case lived, died from laryngeal obstruction.

Before closing my account of these cases, I wish to add that whether papoid be a solvent of membrane or not, I believe it to have two good effects when applied to the throat in a case of diphtheria: (1) it relieves pain, seeming to act more or less as a local anesthetic; (2) it prevents or destroys the offensive odor so common in these cases.

I trust that this recital of my limited experience with papoid in diphtheria may lead to an expression of experience from those whose opportunities for using it have been greater than my own.

MARCH 15TH, 1889.

CORRESPONDENCE.

PRESSURE FORCEPS VERSUS THE SUTURE IN VAGINAL HYSTERECTOMY.

EDITOR AMERICAN JOURNAL OF OBSTETRICS.

DEAR DOCTOR:—On September 19th last, I read before the American Gynecological Society a paper on "Pressure Forceps versus the Suture in Vaginal Hysterectomy." This article was published in the Transactions of the Society for 1888, Vol. XIII.

On the question of priority in the use of pressure forceps, the article contained, with his permission, a letter from M. Péan. A few days ago, I received from Dr. Richelot a reply to the letter of Péan with a request that it be published.

The following are translations of the letters of Drs. Péan and Richelot, who may speak for themselves :

VERY DEAR AND HONORED CONFRÈRE :—You will find in the five volumes of the "Leçons de Clinique Chirurgicale de l'Hôpital St. Louis" all the information you desire on the subject of temporary and permanent hemostasis by pressure forceps in all surgical operations.

At the end of vol. i. you will find the lessons which I have given for many years, and which have been reproduced by my internes, M. Deny and M. Exchaquet. In vol. ii. you will find many clinical lessons which I published to establish the history and determine the applications. In vol. iv. the second and third lessons are devoted to vaginal extirpation of the uterus. You will see that, as in all my operations, I practise what I recommended at that time regarding hemostasis. These lessons were read at the Académie in July, 1883. In the same volume you will find the description of my method applied to vaginal hysterectomy (in lessons 11, 12, and 13). In vol. v. you will find the reply which I made at the Congrès Français de Chirurgie to Dr. Richelot when he sought to appropriate to himself my method, which my internes had communicated to him (on page 213, lesson 14), as well as the letters of Dr. Buffet d'Elbœuf. The applause of the entire assembly prevented Richelot from continuing to go on in this way so lamentable for his reputation. In 1887, my interne, M. Secheyron, received the prize of the Académie de Médecine of Paris for his essay on "Vaginal Hyster-

ectomy." In this work all my rights of priority are established. M. Richelot, who presented an essay on the same subject, received no recompense at all.

This year, 1888, you will find in the *Gazette des Hôpitaux* a part of the lessons on morcellement and hemostasis by pressure forceps which I had communicated in 1873 to the Académie de Médecine of Paris. I there used illustrations in order that those might better understand my method who, being foreigners, would better understand a description illustrated by pictures than the French alone.

My interne, M. Secheyron, is now publishing besides an important work upon vaginal hysterectomy, in which you will soon find all the information which would interest you upon this subject.

Believe in my entire devotion.

(Signed) PÉAN.

PARIS, August 1st, 1888.

PARIS, April 14th, 1889.

SIR AND HONORED CONFRÈRE :—I have before me your interesting article on "Vaginal Hysterectomy," which closes with a letter in which M. Péan accuses me of wrongfully claiming priority in the method of hemostasis by pressure forceps.

This letter cleverly mixes up the subject of forced-pressure in general with its special application to vaginal hysterectomy. It does not give dates, and it refers to articles written by obliging students. It contains also a series of inaccuracies to which I do not consider it necessary to reply in detail. But, as I value the good opinion of my confrères, allow me briefly to recapitulate the facts. My friend Terrier, surgeon to the Hôpital Bichat, who saw me operate during his service in 1885, will bear witness to my American colleagues as to the accuracy of my statements.

After my communication to the Société de Chirurgie, November 11th, 1885, in which I advocated the entire abandonment of the ligature in vaginal hysterectomy, and the securing of permanent hemostasis in the broad ligaments by the use of pressure forceps, which should be allowed to remain for a time, I received the following letter from M. Péan :

MARCH 1st, 1886.

MY DEAR RICHELLOT :—I do not think that you intentionally forgot to mention in *L'Union Médicale* the first operations of vaginal hysterectomy which I performed at Paris, although they were reported to the Académie de Médecine in 1883 and mentioned in several journals. You have, doubtless, not consulted the library of the Académie. It also gives me real pleasure to send you the clinical report in which they were mentioned. It is an extract from volume iv. of the "Clinique de l'Hôpital St. Louis," which will appear in a few days.

My first operation was performed at Paris before our confrère Demons had done his first vaginal hysterectomy at Bordeaux.

My two succeeding operations were also done in 1882. You see that they interested the statisticians of Paris. Since that time I have done three other similar operations, of which two were successful. This makes six operations that I have had in my private practice, four being successful and two unsuccessful. I have at your disposal all the notes of the cases, and the anatomical specimens to verify them, if they will be of use to you in your researches.

Your devoted colleague,

(Signed)

PÉAN.

You will see that in this letter not a word is said about forcipressure. In the three communications to the Académie, of the existence of which I was not aware, the author does not utilize the forceps for permanent hemostasis; he expressly recommends—I have his article now before me—that all the forceps which have been used in the course of the operation be removed and replaced by ligatures, and that the wound be closed by bringing together the margins of the peritoneum.

After this appeared the thesis of Gomet ("De l'Hystérectomie Vaginale en France," Juillet, 1886), in which were reported six new cases of M. Péan, up to that time unpublished. In one of these, bearing the date of June 19th, 1885, the author thus expresses himself: "It would have been impossible for me to remove these forceps, because they were applied so high up. I decided, therefore, to leave them in place, and did not apply a suture to the wound." In the same paper is described the procedure of M. Péan, which consists in turning the uterus, in tying each broad ligament in two portions, and in closing the wound by from ten to twenty sutures.

Prior to this, Baeckel, on October 26th, 1882, had left *in situ* two large forceps upon vessels which could not be reached by the ligature. Jennings, of London, did the same on October 30th, 1885, after a ligature had slipped.

These facts being known to me, I made a formal declaration to the Congrès Français de Chirurgie on October 19th, 1886, that, in the use of pressure forceps for permanent hemostasis in vaginal hysterectomy, I had not made "any invention," and that my rights of priority reduced themselves to the following formula: "Systematic employment of pressure forceps for permanent hemostasis and the abandonment of all ligatures, not as a matter of expediency or in difficult cases, but invariably and as a matter of preference." This phrase is certainly not ambiguous, and even at the present time it seems to me a sufficient answer to the accusations which have been unsparingly heaped upon me.

Since that time, I have published my reports and have not entered into any controversy at all. I have frequently given my opinion as to the shape of forceps, but have never given any one authority to call any instrument whatsoever by my name.

Notwithstanding this reserve, M. Péan has not ceased to complain of me in terms which betray the most violent indignation.

He has almost gone so far as to say that I claimed to be the inventor of *forçi-pressure*.

I do not desire to take up in detail what M. Péan has caused to be written during the last three years upon a subject which touches him to the heart, but the zeal with which he has pursued me even to America does surprise me. Meanwhile I remain quietly here in Paris, and—as I at least think—without bearing him malice.

Accept, very honored confrère, the expression of my best wishes.

(Signed)

DR. G. RICHELLOT,

*Professeur agrégé à la Faculté de Médecine
de Paris, Chirurgien de l'Hôpital Tenon.*

THE AMERICAN JOURNAL OF OBSTETRICS for October, 1888, contained a very complete résumé of my article. The operation is attracting so much attention that the question of priority is of considerable interest. I therefore have taken pleasure in sending you the statements on that question of the two principal claimants.

Yours truly,

E. C. DUDLEY.

70 MONROE ST., CHICAGO, ILL., June 14th, 1889.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

Stated Meeting, February 19th, 1889.

The President, DR. H. T. HANKS, in the Chair.

MULTILOCLAR OVARIAN CYST.

DR. J. G. PERRY.—I have a specimen to present, and in connection with its history one or two points of interest. The case was that of a lady, 54 years of age, who passed the menopause five or six years ago. There was no discharge from the uterus for about six months, and then a flow began which persisted until the operation, three weeks ago. When I first examined the patient, the uterus was found anteverted, and over it was a tumor apparently as large as a good-sized kidney. I could move the tumor all about the abdominal cavity, and carry it up even to the liver, and in this neighborhood it took a position which seemed very comfortable to itself and led me to think that it was a floating kidney. It remained in this position three days, but on the fourth day it had resumed the position in which I had first found

it. Being unable to feel the ovaries, I placed the tumor in the position which the left one should occupy, and it remained there three days.

I could not account for its great freedom of motion without accepting the idea of its being a fibroid with a long pedicle, or a fatty tumor of the omentum; but the hemorrhage it caused indicated the former. I placed it directly under the line of proposed abdominal incision, in order that it might be removed without delay; but in dividing the peritoneum, it disappeared so completely from sight and touch that I had to introduce the left hand within the vagina to find it. It was found behind the uterus, and so firmly held as to require a great deal of effort before it could be brought up to the line of incision. There was also much difficulty in keeping the intestines within the abdominal cavity. The tumor seemed to be ovarian and one involving the whole structure of the gland; and while it appeared to be an excellent example of unilocular cyst, the discovery of a smaller cyst in its very thin wall showed it to be multilocular. The feature of interest in the case was the great mobility of the tumor prior to the operation, and the extreme difficulty with which it was dragged out of the abdomen and ligated during the operation. I am unable to state what brought about the change in mobility. The patient has made an excellent recovery, and had no hemorrhage since the operation.

DR. W. GILL WYLIE.—These cysts are very apt to be movable until in their movements a little inflammatory trouble is developed, when they become adherent. Last Monday I was going to do Alexander's operation at Bellevue Hospital for what appeared to be complete prolapsus of the uterus, in a case in which I had already sewed up the cervix and perineum. The uterus was down at the vulva, and the patient had a good deal of backache. Not having examined her thoroughly for some time before, on giving her ether for the operation I found a cyst, not quite as large as the one presented by Dr. Perry, which, on lifting the uterus, collapsed.

DR. PERRY remarked that in his case this explanation was not applicable, for the tumor was freely movable just before the operation. His own explanation of the case was that reflex spasm of the tissues caused the tumor to be drawn down and fixed, for the abdominal muscles were very rigid when he cut through them, and the intestines escaped with great force, so that for ten or fifteen minutes he was unable to go on with the operation.

DR. BUCKMASTER.—That rupture of a cyst within the abdomen does not always cause inflammatory trouble is shown by two cases which have been under my observation. In one case I made an abdominal section a few days after rupture of a small cyst; and the other was a case of a friend who also ruptured a small cyst by manipulation. Neither case was followed by any unfavorable symptoms.

VAGINAL HYSTERECTOMY FOR COMPLETE PROCIDENTIA.

DR. G. M. TUTTLE.—I have two specimens obtained since the last meeting of the Society. They possess no features of unusual interest, except that such specimens are always of great interest to the man who operates. The first—one of cancer—was a very favorable case for vaginal hysterectomy, although I had anticipated a great deal of trouble on account of the narrowness of the vagina and the size of the uterus. The operation, however, proved easy. The only difficulty was found in the broad ligament, due to some prior inflammatory trouble. There I used the clamp. The specimen shows that the disease had advanced up to the os internum. The woman is now in good condition.

In the second case which I operated upon for complete procidentia, I anticipated rather an easy operation, but found it rather a difficult one. The uterus was large; the dissection from the bladder was very difficult indeed, on account of the edema and vascularity of the parts. Polk's clamps were used. Every means for keeping the uterus up had previously failed.

OVARIAN CYST.

I have here some other specimens of minor interest. The first was from a case in which I made an error of diagnosis. I thought the woman was suffering from pyo-salpinx. She gave a clear history of gonorrheal infection. She had epileptoid attacks of a most pronounced type, coming on every month. She bled very freely from the uterus. I felt what I supposed was a diseased tube, but it proved to be a cyst of the ovary.

LAPARATOMY FOR DISEASE OF THE APPENDAGES.

Here are also some other specimens of uterine appendages, to which are attached labels. The one in my hand was removed by operation last week. It was a case of double pyo-salpinx adherent to the vermiform appendix, which was removed with the tumor. Together the two tumors formed the largest which I have yet removed. In the case of this other specimen there was a cyst, which was aspirated and pus withdrawn whose odor was so strong as to fill the operating room and cause me to fear infection. Notwithstanding extensive adhesions, I managed to get the tumor out intact, and the patient made a good recovery.

Here is another specimen of pyo-salpinx, removed yesterday, in a case in which I had previously curetted the uterus for hemorrhage. The patient was a colored woman, very stout, and little could be felt before the operation. There has been no rise of temperature.

ALLEN'S SURGICAL PUMP.

I would like to call attention to an instrument which I have used with much success—that is, Allen's surgical pump. The description accompanies the instrument.

Recently a woman came under my care who was bleeding violently after miscarriage. The dilating bag connected with the pump was introduced into the cervix, and dilatation easily effected until the finger could be introduced up to the fundus and the placenta be removed. The canal was then packed with iodoform gauze and drained.

SUBMUCOUS FIBROID OF THE UTERUS.

In this bottle is a fibroid tumor of the uterus removed through the vagina, the cervix having been severed to allow of its escape. The tumor is ovoid, was nearly as large as a child's head, and was separated by torsion. I packed the large cavity of the uterus with iodoform gauze and put in a drainage tube. There was no reaction, no fever. Here is another somewhat similar case.

DR. A. P. DUDLEY asked the speaker whether, in the case in which the sac burst and pus escaped into the abdomen, he used the drainage tube.

DR. TUTTLE replied that he did, and left it in over a day.

DR. H. C. COE.—The case of vaginal hysterectomy suggests a subject which is yet under dispute. It appears to me that an examination of the specimen presented, and of several other uteri which I have seen extirpated per vaginam, suggests the question whether high amputation would not have removed the cancerous disease entirely, and thus have saved the patient exposure to the shock of a more serious operation. In one patient, I started to perform vaginal hysterectomy eighteen months ago, but afterward decided to do high amputation. Although she had a recurrence, I must say that her condition compares very favorably with that of the average case of vaginal hysterectomy after the same lapse of time.

DR. TUTTLE.—In all the cases of cancer of the uterus in which I have performed hysterectomy, few in number, a section was first taken out and examined to render the diagnosis positive. In this particular case, which was a typical one of rapidly progressing malignant disease, both Dr. Prudden and Dr. Roosevelt counselled removal of the entire organ. The temperature has not risen above 99° F. The cases which I have seen have impressed me with the fact that the operation, aside from its technique, is not a very serious one. I make these remarks with some deference before members who have had larger experience, but in the cases at Roosevelt Hospital, eight or nine in number, there has not been a death nor a rise of temperature above 99.5° F.

Within a week I performed high amputation in a case in which I found that I would be unable, in doing hysterectomy, to dissect the uterus out because of infiltration. Having begun the dissection in Douglas' pouch, I closed that wound and cut away as much of the uterus as I could above the os internum. The wound is now clean, and I shall watch the case with considerable interest; but my own feeling is that where the malignant disease has a short history, but is of rapid progress and reaches the submucular tissue, attended by pronounced cachexia, as in the cases which I have operated upon, removal of the entire organ is justifiable.

DR. W. GILL WYLIE.—If a woman has what has been proven

to be malignant disease of the uterus, removal of the entire organ is without question, in my mind, the operation which should be performed. I agree fully with Dr. Tuttle that vaginal hysterectomy, if done properly and in cases in which the disease has not advanced too far, is attended with very little shock if there be no hemorrhage, and with very little danger to life. Indeed, there is little more danger than from high amputation. And the technique of the operation has now become so simple that I see no reason for leaving any portion of the uterus at all if it has been proven to be cancerous. In cases too far advanced, it is probably just as well to scrape the diseased portion and burn with chloride of zinc, or carry out some such procedure.

I rarely use clamps, but have them at hand. I have found, after tying, the same tendency to retraction of the tissues and slipping of the ligature which Dr. Tuttle mentioned in the use of the clamp, and I have learned to avoid this by first placing a temporary ligature around the broad ligament close to the uterus, and then, after cutting the tissue and allowing it to retract, placing the final ligature which is to control hemorrhage. Only lately I have done two operations in this way, in which I think not more than an ounce of blood was lost altogether. Thus far I have not had a death from the operation, although I have not had many cases.

DR. BUCKMASTER.—Regarding the case in which Dr. Tuttle desisted from hysterectomy and contented himself with high amputation, I would like to ask the opinion of the members regarding the propriety of doing hysterectomy in any case in which there is vaginal infiltration. I have seen some cases where the operation was denied the patient on account of slight vaginal infiltration.

DR. TUTTLE.—There was no vaginal infiltration in my case at all. The adhesion was due to perimetric organized exudation, not of malignant character, as far as I could judge. The vagina was clean.

DR. WYLIE.—I have met with one complication which has been rather trying in cases demanding hysterectomy; that is old salpingitis. The tissues in such cases are hard and lack elasticity, making the tying and the entire operation very difficult. Whether the tubal disease preceded the cancer or was of cancerous nature I was unable to decide. The only two cases of suprapubic amputation which I have lost in the past two or three years, for whatever disease, were cases complicated by old salpingitis.

DR. BUCKMASTER thought his question had not been answered, and added that he could see no reason, if amputation of the uterus was as simple as had been represented, why it should not be done even where there was slight infiltration into the vagina.

DR. A. JACOBUS inquired of Dr. Tuttle whether, in the case in which he abandoned complete removal by the vagina, it would not have proven advantageous to do the operation, working both from above and below.

DR. TUTTLE replied that the operation referred to by Dr. Jacobus was thought of, but the patient was too much reduced to justify it. In reply to Dr. Buckmaster's question, he said: I should not personally advise removal of the uterus for malignant disease if I found the vagina infiltrated. I have had a good many

such cases under observation, but have contented myself with removing the exuberant growth and cauterizing. One or two surgeons, however, have done amputation in these apparently hopeless cases, claiming that the patient's condition is not as bad as if the operation had not been done. We may suspend judgment upon that question for the present.

DR. WYLIE.—I think Dr. Buckmaster's question cannot be answered in so general a way. Vaginal hysterectomy is rendered very difficult where there is infiltration of the vagina forward or to one side, for there is great danger, in such cases, of injuring the ureters. In more than one case operated upon, both ureters have thus been tied by mistake. In the attempt to tie outside the line of infiltration, there is much more danger of including the ureters than where no infiltration exists. If the disease extend in that direction, I should consider it wrong to operate owing to the danger incurred.

DR. MALCOLM McLEAN inquired what had been the longest immunity from malignant disease after hysterectomy performed by American surgeons.

DR. TUTTLE said the longest period without recurrence known to him was five years, in a case of Dr. Bull's.

DR. DUDLEY.—I have looked over the statistics of seventy-six cases, and in some there was freedom from the disease over seven years. I believe Dr. Lane, of San Francisco, who was first to do hysterectomy for cancer in this country, shows the best statistics. Some of the patients whom he first operated upon, in 1876-7, are still living.

DR. H. C. COE.—The average duration of life subsequent to amputation is not much more than a year.

DR. DUDLEY.—In the cases which I collected, the average duration of life was between eighteen months and two years.

DR. COE.—The latest statistics on high amputation are by Verneuil, who found the average duration of life to be about twenty-six months.

DR. McLEAN.—In my limited experience, recurrence after hysterectomy has been very prompt, but in several cases of high amputation recurrence has been deferred a great many months. One patient, whom I operated upon two years and a half ago, I see frequently, and she looks very well, although nine months ago I detected slight return of the disease. In my experience, cancer of the uterus, unless it take on a very offensive shape, which in a good many cases it does not, proves as little troublesome if let alone. This may not seem a scientific way of looking at the case. I have asked the question regarding the results of hysterectomy, because I would like to be encouraged to do it more than in the past.

DR. J. E. JANVRIN.—I think the ground has been pretty well gone over by those who have already spoken; but, regarding my own practice, I have not attempted extirpation of the uterus in cases of infiltration of surrounding tissues, for the reason that I should expect early recurrence on account of failure to remove all the diseased tissue. That has been the generally accepted view, I think, up to the present time. Where, in beginning to operate with the view of removing the entire uterus, I have found infiltration of the broad ligaments, I have desisted and contented myself with high amputation. Although, as Dr. Wylie has said, the infiltration in the broad ligaments may not be of a malignant

nature, yet I believe it impossible to tell either before or during the operation whether it is simple or malignant in character, but the chances are decidedly in favor of the latter.

DR. TALBOT.—I have had no experience with hysterectomy, but have contented myself with Sims' amputation, and the result has been fair success. One patient whom I operated upon four years ago had almost complete destruction of the uterus, and so offensive an odor that patients could not occupy the bed next to hers. After the operation, only a small, ball-like mass of the fundus of the uterus remained. The patient is well to-day and manifests no recurrence.

DR. JANVRIN.—Dr. McLean has alluded to the advisability of leaving certain cases alone. I would say that in cases in which the disease is advanced, the cervix entirely gone, the vagina infiltrated, the general health run down, there is not much that can be done, but I invariably curette the organ thoroughly, and in several cases have passed through into the cul-de-sac; have used the Paquelin cautery, and usually a fifty-per-cent solution of the chloride of zinc. In my experience, such cases have been greatly benefited by this procedure; the discharge ceases for quite a while, the general health improves, and I am sure that life has been prolonged considerably and made more comfortable. As stated, in several cases I have penetrated into Douglas' cul-de-sac and no harm was done. Within the past four or five years, I have had two cases in which, after beginning hysterectomy, I found infiltration of the posterior wall of the bladder, and contented myself with high amputation. There was no infiltration of the vagina or broad ligaments. One patient lived about three years and a half after high amputation, and then died of recurrence; the second lived only a little more than one year. I have recently seen a case in which the operator removed the uterus and its appendages for cancer, and, although it has been but three months since the operation, the disease has returned and the patient will not live longer than a week or two.

THE PRESIDENT.—It seems to me we should not only consider whether we can do a vaginal or suprapubic hysterectomy or a high amputation, but also whether any operation is justified. To decide that question we should consider the age of the patient, the results of the microscopic examination, and what has been the progress of the disease the last few months. In the case last mentioned by Dr. Janvrin, I saw the uterus removed, and the operation was done with considerable skill. The disease seemed not to have extended more than half an inch above the os internum, yet there is no question that it has already returned and is one of the most malignant type of cases. Although the result has been unfavorable, yet an operation of some character was demanded. A high amputation would have been just as useful in her case and in many other cases. It makes a great difference whether the disease is in a patient sixty years old or in one only sixteen. Patients of fifty-five or sixty, according to my experience, will live two or more years, as a rule, without any operation whatever; while the one of but sixteen or twenty has usually the more malignant disease, and must have an operation early, and a thorough one will be required. I suppose no fewer than twenty-five cases of cancer came to me at the Demilt Dispensary when I was attending physician there, and one of them is coming to me yet, and another has only lately died after

more than four years of treatment. However, *ceteris paribus*, where there is no surrounding infiltration we are justified in doing hysterectomy to-day where four years ago we would have done the high amputation.

DR. TUTTLE.—I would like an expression of opinion with regard to the propriety of hysterectomy for complete procidentia of the uterus. The treatment, I believe, is comparatively new.

DR. WYLIE.—That question has interested me lately. Until recently I believed that all cases of prolapsus could be cured simply by plastic operations. But, having seen two or three failures follow that method, I have considered hysterectomy, and have resorted to it in one instance, although as much on account of the patient's request as because of special necessity for the operation in that particular case. Ordinarily I sew up any lacerations, cut off a part of the cervix if elongated, sew up the anterior and posterior walls of the vagina if relaxed, doing all the operations at one sitting, and they rarely fail to keep the uterus up. I believe that if the cases are not of too long standing this procedure will prove successful in all. But in old cases in women of advanced age, in whom there is practically a hernia of all the pelvic contents, a plastic operation may fail. In these cases, there is often some further trouble above the uterus, as fibroid tumor. In the case operated upon for hysterectomy, the uterus could be replaced with difficulty and would come down as soon as the finger was removed. I anticipated an easy operation, but, as in Dr. Tuttle's case, it proved difficult on account of the changed relations of the parts. The uterus had become enormously elongated, and it was necessary to go up five inches instead of two or three before reaching its fundus. The operation is very rarely indicated.

DR. DUDLEY.—The operation of vaginal hysterectomy for complete procidentia is not very recent. It has been done a considerable number of times, as I learned while collecting statistics of vaginal hysterectomy for cancer. I did not include those cases in which the uterus was not the seat of cancer. The first time vaginal hysterectomy was done in this country in a case of complete procidentia and malignant disease was done by mistake in 1850 or 1852, by Dr. Eve, of Georgia. When he began his operation, he supposed he was removing simply a cauliflower growth. The tubes and ovaries were removed with the uterus. In all the cases where the uterus was completely prolapsed, the operation, it was stated, was exceedingly difficult on account of the changed relations of the bladder and rectum. I should not undertake vaginal hysterectomy for procidentia, if it were possible, by doing laparotomy, to fasten the uterus up.

In reply to an inquiry by Dr. McLean, DR. TUTTLE said that at the time of the operation he was unable in his case to replace the uterus, and the patient being a thin, emaciated person, without any remains of a pelvic floor, he did not think, if the womb had been replaced, that it could have been retained.

THE PRESIDENT.—I have assisted at three operations, and done two at the Post-Graduate Hospital, for complete procidentia, and, while the time has been too short for a final judgment, there has been as yet no descent of the uterus. The organ is less likely to fall after being retained in position two weeks than after only one week. One patient has lately called on me, four months after the operation, and there is absolutely no descent of the uterus, and,

better still, no discomfort whatever at the abdominal attachment.

DR. McLEAN.—Why not use a pessary? I have patients, who had complete procidentia, who have worn the Thomas pessary ten years with perfect comfort.

DR. TUTTLE.—My experience with the pessary in these cases has not been favorable.

DR. WYLIE thought that it was just in the few cases where the pessary could not be borne, nor the uterus retained in other ways, that hysterectomy was called for.

HYSTERICAL APHASIA.

DR. A. M. JACOBUS reported a case of hysterical aphasia in a woman who had recently engaged him to attend her in confinement. February 8th, 1889, at midday, she lay down on the lounge to take a nap, and on waking found that she could not speak. It may be stated that her age is twenty-seven, that she has been married seven years, has given birth to two children, has had two miscarriages, and is now pregnant in the eighth month. In her twentieth year, she had a slight attack of chorea in the right leg, and her mother says that her speech was a little thick at that time. About two years ago she had an attack of malaria, and during the height of the fever she had hysterical laughing spells.

Though she was unable to speak after waking from her nap, February 8th, there appeared to be no motor paralysis of any part of the body, but there was complete anesthesia of the upper extremities and body, and slight anesthesia of the lower extremities. The prick of a needle on the upper extremities and face was borne without notice or expression of pain. The pupils were normal and reacted to light. On asking her to protrude her tongue, she did so, and it was directed very slightly to the right. The first day she was able to speak a few words, but on the next day, although she tried, she was unable to utter a word that could be understood. There was no increase of the temperature nor of the pulse. After four or five days, she began to say a few words, like "yes," "no," but seemed to understand with difficulty to-day; the tongue pointed a little toward the right side, and there was still a little hesitancy in speech. Thinking the condition hysterical, she was given a mixture containing *asa fetida*. This was so nasty that she used it only one or two days. The child was very active up to the day of the attack, but for four or five days afterward she could feel no movements, nor could I by palpation. With the return of speech the movements became perceptible, and the fetus is now as lively as usual. The case is of interest on account of its rarity. I neglected to say that sensation is returning, and that during the height of the attack she was unable to write, though a few days later she was able to write her own name, but not her husband's. The patient has since been delivered of a very small but healthy boy.

THE PRESIDENT, who had inquired whether electricity was used in Dr. Jacobus' case, said it had brought back sensation and motion in the forearm and fingers in a case of hysterical paralysis in a physician's wife who had been pregnant nine months. The child was born healthy.

DR. R. A. MURRAY said he had seen a number of cases of aphasia from hysteria in Bellevue Hospital, but not in pregnant women, except in one instance at an early month. The electric current was applied and the aphasia soon disappeared.

SPINA BIFIDA COMPLICATING AND OBSCURING BREECH PRESENTATION.

DR. J. H. FRUITNIGHT.—A case of spina bifida obscuring a breech presentation was lately seen by me in consultation. The attending physician made an examination in the morning, and diagnosticated head presentation. I saw the patient in the afternoon, and made out breech presentation, but on further examination felt a globular body which for the moment puzzled me. I had been positive it was a breech presentation, while the other gentleman was positive it was a head presentation. The globular body could not be entirely bounded, although it was felt to be attached. We awaited developments. The child was delivered easily in the natural way, and as expulsion progressed it was recognized to be a spina bifida complicating breech presentation.

THE PRESIDENT.—I remember distinctly a case of encephalic head presentation where the tumor projected so far down that I thought I was touching the breech with my finger, and did not feel quite sure of what I had found until I had obtained reflex action of the feet from pressure on the brain tumor. The instantaneous reaction from pressure led me to suppose that some portion of the brain or spinal column was being pressed upon.

DR. MURRAY.—I would ask Dr. Fruitnight what was the location of the spina bifida. It must have been low down to involve the breech, unless it was a slightly transverse presentation. It is usually too high to interfere with a diagnosis of breech presentation.

DR. FRUITNIGHT.—It was low down.

DR. MURRAY.—I have seen a case of hydrocele in which it was very difficult to make out the breech, on account of the enormous extent of the hydrocele. I thought at first it might be a spina bifida in transverse presentation, but the physician who called me to see the case thought it was the bag of waters, and made an unsuccessful attempt to perforate it, first with his finger and then with a wooden probe. Relief was very easy when the nature of the case was made out. It was the only case I have seen in which hydrocele interfered with the diagnosis of breech presentation, and the globular body might easily be mistaken in such cases for spina bifida.

TAMPONING THE PUERPERAL UTERUS WITH IODOFORM GAUZE.

DR. TUTTLE.—It occurred to me that it might be of interest to call further attention to the two cases in which I filled the uterus with iodoform gauze. We get a good many cases at Roosevelt Hospital of women who have passed a fetus and retained the

membranes or placenta. A few weeks ago, one was sent over from the Clinic with a history of bleeding six weeks. The uterus extended up to the umbilicus. I dilated readily, and removed a macerated fetus and large placenta. The uterus was thin, as large as the bladder, with no contractile power. I curetted the cavity, put in iodoform gauze with a drainage tube in the centre, and applied a binder. I recently did the same thing in another case.

The uterus is frequently in a condition in which we cannot get it to contract, and I think it is a safe and wise procedure to fill it with an antiseptic substance like iodoform gauze, which will induce the uterus to quickly contract and become small. I have seen no rise of temperature follow the procedure. The tampon is removed in a day or two.

DR. H. J. BOLDT.—I think it was a year or a little more than a year ago that I spoke on this same subject before the Society, and there was considerable criticism of the procedure I had employed. I can now only indorse every word Dr. Tuttle has said. I am satisfied that if the method were universally adopted it would prove very satisfactory to all. I have this moment forgotten who first called attention to it. I have now in mind its use in post-partum hemorrhage where there is want of contractile power in the uterus. It is a very satisfactory procedure, and I use it in all cases.

DR. WYLIE.—It seems to me a most important matter, in treating the uterine cavity, especially when there is any septic condition after labor, to secure good drainage. If the treatment spoken of by Dr. Tuttle is necessary to accomplish that object, it might do good. But it might also be employed in such a way as to obstruct drainage. The case would have to be watched. But for stopping hemorrhage, hot water at a temperature of 120° F., injected freely into the uterine cavity, will, ninety-nine times out of one hundred, succeed, and will cause the uterus to contract. The injection of a solution of bichloride, 1:5,000 or 1:3,000, will cause it to shrink considerably. There should be after-washing to prevent poisoning. What I have paid particular attention to is to have the os uteri freely dilated, and kept dilated in order to secure drainage. I do not think I should use the tampon, but if I did it would be one containing iodoform. I would not leave it in the uterus more than ten or twelve hours at most, and would prefer to fix it in a way to permit of ready removal and afterward of introducing another if necessary. But I hardly think such tamponing necessary against hemorrhage when one can obtain hot water.

DR. TUTTLE.—In these cases, water as hot as the hand would bear was injected, but the uterus had contained a macerated fetus six weeks, was like a bag, and showed no power of contraction.

DR. GRANDIN asked Dr. Tuttle whether he employed the faradic current, and, receiving a negative answer, said: I have found the faradic current a valuable nerve stimulant in these cases. One pole applied to the cervix uteri, and the other over the fundus or on the lumbar spine, will cause the uterus to contract, although there may be reaction shortly afterward. This measure, in addition to hot water, ice, and massage, is a remedy which should not be neglected in atony of the uterus, and I think is preferable to packing and distending the cavity. It seems to me the ultimate

result of packing would be to distend the uterus more and to increase the atony. The organ needs stimulation, not distention. If I understood Dr. Tuttle correctly, he said the uterus had been occupied by a dead fetus for weeks, the patient had been bleeding for weeks, and when he emptied the uterus he simply packed it again and thus exposed the walls to further pressure. I should think that would result in the uterus remaining in a state of atony. The substitution of one foreign body for another is not, I think, going to cause the uterus to contract. Where hot water, ice, massage, and ordinary measures fail to make the uterus contract, I think the faradic current is preferable to the tampon of iodoform gauze. Not that I am afraid of using iodoform gauze at all; I do not think it can do any damage, but I question whether, although it did answer in Dr. Tuttle's case, it would answer as well as faradism; and I further believe that the procedure is unnecessary, for I have yet to meet with an instance where the routine measures associated with electricity will not cause contraction and in due time maintain it, *the organ having been emptied*.

DR. COE.—A rational explanation of the benefit derived in Dr. Tuttle's case would seem to be that observed after this mode of treatment in ordinary surgical cases—the prevention of septic poisoning. Tamponnade of the uterus has been employed in the Woman's Hospital for years, especially where an intra-uterine fibroid has been removed and the organ remained large and flabby.

DR. BUCKMASTER.—I would call attention to the fact that if the water injected is too hot, instead of causing uterine contraction it will have the opposite effect. Milne Murray determined, by the use of a registering apparatus, that injection of water above a certain temperature is sometimes followed by great relaxation and enormous flow of blood.

DR. JANVRIN asked at what temperature water produced this effect.

DR. BUCKMASTER replied that he thought it was above 125° F.

DR. JANVRIN.—Very rarely do we use water above 120° F., even for controlling hemorrhage. Dr. Coe's remark with regard to putting iodoform gauze into the cavity of the uterus after enucleation of a large fibroid tumor may not be exactly appropriate to the subject; but, if I may be permitted, I would say that I have used this treatment in quite a number of cases the last few years. In these cases the fibroid was sloughing. It was impossible to control hemorrhage well or to get contraction, even after the uterus had been washed out carefully with hot carbolyzed water. I have always employed the iodoform gauze as one long strip, leaving the extremity protruding from the cervix or vagina, so that by no possibility could any portion of it be left in the womb after attempted removal. The results have been excellent.

DR. MURRAY.—I cannot conceive how tamponing the uterus with iodoform gauze after delivery at full term can stop hemorrhage. If the uterus were made a firm body afterward by putting on a binder, it would have some effect in controlling hemorrhage. But if a drainage tube is also introduced, it must give vent to the blood, and thus hemorrhage might continue as long as any blood remained in the vessels. Thus I cannot understand in what way such a procedure could stop hemorrhage, unless it were by compression of the aorta. In abortion at the fourth month, we have to do with a uterus in an entirely different state

from what we find it at term. But I do not believe there is one case in ten in which thorough emptying of the uterus will not arrest the hemorrhage, which would render any kind of tampon unnecessary. Regarding the use of the iodoform tampon to prevent sepsis, I think there would be more likelihood of sepsis with its use than without, for by its presence it might interfere with the closure of vessels, and thus favor the entrance of septic matter into the circulation. It may be that in Dr. Tuttle's case, where the cavity of the uterus had been occupied by a macerated fetus, the iodoform gauze had some effect in preventing the development of sepsis, for the mouths of the vessels in that case were partly closed. I do not think it well to allow the impression to go forth that this Society approves of the tampon for stopping post-partum hemorrhage. Indeed, many patients suffering from post-partum hemorrhage would die before the gauze could be introduced.

THE PRESIDENT.—In all ordinary cases, the hemorrhage can be controlled by the usual means, such as hot water, massage, compression, and electricity. But there are rare cases in which, the uterus being diseased at the site of the placenta, more heroic means will be required to arrest the hemorrhage, and I think that here, after thorough curetting, iodoform packing will prove serviceable both in arresting hemorrhage and preventing sepsis.

DR. GRANDIN.—I beg leave to take exception to the President's last remark. Where there is septic infection of the endometrium, I do not see what is to be gained by packing the uterus with iodoform gauze. I should prefer to remove the cause of the sepsis, to remove the degenerated portion of endometrium by the curette, and then to wash out the debris. In my experience, it has been rarely necessary to douche more than once after thorough curetting. I do not see what benefit is to be derived from covering the purulent or degenerated endometrium with iodoform gauze. I would not pack such a uterus. As for the antiseptic effect of the gauze, it has been proved not to exist.

THE PRESIDENT.—I do not wish it to be understood that I would pack any septic material within the uterus. I would remove the diseased tissue with the curette, but would be perfectly willing, as I have done more than half a dozen times, to pack the uterus with iodoform gauze afterward.

DR. GRANDIN.—If decomposition should take place afterward, its chief symptom—fœtor—will be obscured by the odor of the iodoform. It is for that reason that I have always opposed the use of iodoform in the puerperal uterus or vagina. The odor of decomposition is the chief danger signal of beginning or of recurrent local infection, and should never be obscured by medications.

THE PRESIDENT.—The point made by Dr. Grandin is a good one. It is true there are also other danger signals, yet, if it can be avoided, we should not deprive ourselves of that pertaining to the fœtor of decomposition.

DR. J. LEE MORRILL.—I would ask whether, when it is possible that some debris has been left in the uterus, swabbing out the cavity with carbolic acid or tincture of iodine would not have the antiseptic effect of iodoform gauze and at the same time not interfere with drainage.

DR. J. H. FRUITNIGHT.—I did that last week in a case of miscarriage at the second month. The fetus had been expelled, but,

the secundines remaining, I removed them piecemeal, then curetted, and swabbed out the uterus with a solution of carbolic acid, 1:1,000, after the method of Doléris, of Paris. When I first saw the patient, she had a temperature of 100.5° F. and other indications of septic poisoning. A few hours later those symptoms had disappeared, and she made a favorable recovery.

DR. WYLIE.—Swabbing out the septic uterus with carbolic acid, even pure carbolic acid, after curetting, is not a new procedure. I have been doing it the past ten years.

DR. BUCKMASTER remarked that Doléris employed a small brush, and by its use claimed to go over the surface of the uterus much more rapidly and thoroughly than others had done.

DR. JANVRIN.—Twenty-five years ago, or longer, Dr. Trask, of Astoria, reported quite a number of cases of severe post-partum hemorrhage which he had controlled by applying pure tincture of iodine to the interior of the uterus. The method was afterward adopted by a great many others for the control of post-partum hemorrhage.

DR. GRANDIN said that it had been his custom for a number of years to irrigate the uterus with iodine and water, or to wipe out the cavity with pure iodine, after curetting. The method was valuable, particularly, from the styptic effect of the iodine.

DR. MCLEAN.—I wish to say a word in favor of strong carbolic-acid swabs as opposed to weak ones. As Dr. Wylie can corroborate, I have for a number of years recommended and used this method, and have employed carbolic acid strong enough to sear the débris, not simply as a wash for the surface. After swabbing out the interior of the uterus, I press upon the organ in order that no acid may remain. I have no reason to change this plan of treatment.

DR. A. P. DUDLEY.—I think it is a mistake to look upon the puerperal uterus as having a mesh of open sinuses pointing into the cavity of the organ. I do not think it is so. The sinuses which feed the fetus run along the wall of the uterus, and there is a thin layer of muscular tissue between the sinuses and the placenta; so that I think the danger of poisoning from absorption during the use of iodoform gauze is not as great as Dr. Grandin anticipates. I noticed this anatomical structure in a case of Cesarean section the past week, in which the placenta was attached along the entire anterior wall of the uterus. I had to cut right through the placenta before coming down upon the fetus. I there noticed the large blood vessels which supplied the placenta running directly across the walls of the uterus, while no sinuses appeared on the surface next the placenta, which was smooth. When I stripped off the placenta, it was like separating two portions of thin leather. The portions of placenta which broke off stood out on the uterine side like little follicles, while an eighth of an inch below that the sinuses were as large as one's little finger. Therefore I do not think we ought to look upon the interior surface of the emptied uterus as having widely open vessels lying in wait to scoop in any poisonous substance which may come within the cavity.

DR. GRANDIN.—I wish to correct a false impression which Dr. Dudley seems to have, that I object to packing the uterus with iodoform gauze through fear of iodoform poisoning. I made no such statement. So far as concerns the appearances which he has seen in the puerperal uterus, they are, if my memory serves me correctly, what are usually described in the books. The general

infection takes place both through the blood and the lymph vessels.

DR. DUDLEY.—I made these remarks because the words "open-mouthed vessels" have been used in the discussion.

DR. PARTRIDGE.—In making post-mortem examinations, I have always found the sinuses lying, as Dr. Dudley has described, about a sixteenth or an eighth of an inch below the surface of the endometrium. At the same time they necessarily come in contact with placental tufts at various points, and I think that if one will examine the uterus in the condition Dr. Tuttle has spoken of, like a relaxed bag, he will see numerous orifices, as large as the lumen of a quill, when the placenta is being stripped from the uterine surface. There are plenty such orifices from which severe hemorrhage may take place, but I agree with Dr. Dudley that the danger of septic absorption is not through those open sinuses, but by the agency of the lymphatic system.

DR. TUTTLE.—I am gratified with having introduced a subject which has called forth so earnest a discussion. I gave my reasons for putting iodoform gauze into the uterus, beyond that of control of hemorrhage, but it seems they were partially overlooked. The uterus was first thoroughly cleaned; then we used to control hemorrhage, as is our routine practice in Roosevelt Hospital, a solution of Churchill's iodine of the color of sherry wine. We could have stopped the hemorrhage temporarily by the faradic current, and also by introducing the hand while making pressure over the fundus. But those measures could be employed only a short time. Instead, therefore, of introducing the hand, a continuous piece of iodoform gauze was employed, drainage established, and a firm binder applied. As uterine contraction takes place and continues the gauze is gradually withdrawn.

DR. MURRAY.—Although Dr. Tuttle expected the gauze to stop hemorrhage by exciting the uterus to contraction, I still think that effect could be produced by less dangerous means.

Replying to Dr. Jacobus, DR. TUTTLE said the uterus in his case did not contain a fibroid.

TRANSACTIONS OF THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, Friday, March 15th, 1889.

The President, CHARLES T. PARKES, M.D., in the Chair.

DR. W. W. JAGGARD read the following notes on the

ETIOLOGY OF PUERPERAL ECLAMPSIA.

GENTLEMEN:—At the request of the President, I have prepared a brief outline of some of the more important facts in the causation of puerperal eclampsia.

The term denotes epileptiform convulsions, characterized by recurrence of paroxysm after longer or shorter pauses, followed by

unconsciousness, that occur during labor, pregnancy, and the puerperium. As thus defined, the expression puerperal eclampsia restricts us to no particular theory as to etiology.

Happily, the symptom, justly regarded as a disease, is of infrequent occurrence. In general terms, eclampsia is observed once in five hundred deliveries. Out of 816 cases collected by Carl Schroeder, convulsions occurred 190 times during labor, 62 times during pregnancy, and 64 times during the puerperium.

Among the modern theories of etiology, the first, as well in point of time as in present importance, is the doctrine that eclampsia is the expression of acute urinemia, conditioned either upon functional or organic disease of the kidneys, or upon obstruction to the flow of urine through the ureters. The evolution of this conception has been gradual, and it may be profitable to trace the stages of its development.

After the recognition of the association of albuminuria and disease of the kidneys with eclampsia by Lever (1843), Jevilliers and Regnault (1848), Frerichs (1851) advanced the hypothesis of uremia, and suggested that the convulsions were due to the retention in the blood of urea and its decomposition into ammonium carbonate. This notion has become obsolete, since, aside from an isolated observation by Spiegelberg (1870), the presence of ammonium carbonate in the blood in sufficient quantity to cause convulsions has never been demonstrated, notwithstanding numerous examinations of the fluid by responsible chemists. The weak points in the hypothesis of ammonemia have been pointed out particularly by Rouxmelaire, Voit, and Bartels.

The notion of the mere retention of urea, without decomposition changes, as the cause of the disease, has been shown to be without basis in fact. Winckel has demonstrated that no such accumulation of urea occurs in the most important organs of dead eclamptics—that is, in the liver and muscles—but that, on the contrary, these organs contain less than the normal quantity. E. Voit and M. Stumpf have observed that the elimination of nitrogen through the urine in convalescent eclamptics is about equal to the minimum excreted in the condition of absolute starvation.

Carl Braun, at the same time that Frerichs published his classical treatise (1851), declared puerperal eclampsia to be identical with the convulsions of Bright's disease. Braun's theory (1857) in his own words is: "The interruption of the secretion of urine in both kidneys, the acute retention of all excrementitious matters (normally excreted by the kidneys) in the blood and tissues, exercises a highly pernicious influence and explains the occurrence of eclampsia." In proof of this theorem, Braun has brought forward an amount of evidence that almost amounts to demonstration. Although certain observers affect a disbelief in this etiological doctrine, yet they all fully recognize it in prevention and treatment. Still, Braun's theory, just quoted, cannot be accepted as

a universal proposition. It explains the very large majority of cases of eclampsia, but it does not explain all cases.

As originally pointed out by Morgagni (1767), and at a later period by Halbertsma (1871) and Löhlein, flexure, infraction, stretching, catarrh, or pressure may prevent the flow of urine through the ureters, and condition, directly or indirectly, urinemia. Although no doubt exists as to the occasional operation of this factor, its etiological moment does not approach the significance of renal insufficiency. Out of thirty-two cases of fatal eclampsia, Löhlein demonstrated dilatation of one or both ureters in eight, or twenty-five per cent. Löhlein concludes that in five of these cases an already insufficient urinary excretion was still further limited, or even entirely interrupted, by retrostasis of urine in consequence of compression of the ureters, so that urinemia and its symptom, eclampsia, followed.

Much light has been thrown within a recent period upon the pathological significance of urinemia. The toxicity of normal urine has been demonstrated, although there is some difference of opinion as to the active agent. Bouchard claims to have isolated five organic poisons, and his observations are supported by Battlehuer, who recognizes the ultimate cause of eclampsia to be a decomposition product like a ptomaine. On the other hand, Voit, Feltz, and Ritter, Astachewsky (1881), Lepine (1885), Stadthagen (1889), maintain the dominant importance of the potash salts, while they admit the effect of the retained nitrogenous matters—urea, uric acid, kreatinia, and the like—in the limitation of tissue metabolism. Closely similar views have been expressed by Nothnagel, Strumpell, v. Jaksch, Fleischer, and Peter.

A plausible explanation of the immediate causation of convulsions in cases of urinemia has been given by Carl Schroeder. The experiments first performed by Kussmaul and Tenner prove that epileptiform convulsions are invariably produced only by ligature of the arteries that supply the brain. It is, accordingly, in a high degree probable that puerperal convulsions are caused by cerebral anemia. How is this cerebral anemia effected? The most highly probable view is that of vaso-motor spasm of the blood-vessels at the base of the brain. In favor of this view there are the following facts: (1) The inability to explain the cerebral anemia in any other way; (2) the sudden onset of the convulsions and the rapid *restitutio in integrum*; (3) the negative results of autopsies; (4) the effect of remedies that cause dilatation of the vessels of the brain.

As to the causes of the vaso-motor spasm, we have the following facts: (1) The plus state of excitability of the nervous system, observed in pregnant, parturient, and puerperal women as in children, so that a vaso-motor spasm will occur, the operation of a cause that at other times would produce no such effect; (2) the vaso-motor centre is more irritable, especially during labor; (3) with

the predisposition upon the part of the nervous system in general, and of the vaso-motor centre in particular, the toxic state of the blood is amply sufficient to give rise to an explosion. What other irritants are at work it is impossible to say. Possibly, as in epilepsy, irritation of the peripheral nerve-endings—that is, irritation of the uterine nerves, or pressure upon the ischiatic nerves—may play a certain rôle.

Of uncommon interest are the recent investigations of Stumpf.¹ This observer found that when the expired air of an eclamptic smelled of acetone, that acetone could always be demonstrated in the patient's urine, distilled or not distilled. Knowing the relation of acetone and allied bodies and acetonuria to the coma of diabetics, he at once sought for sugar in the urine of the same individuals, and succeeded in showing its presence in all the cases in which urine in sufficient quantity for testing could be collected. Stumpf came to the conclusion that, under abnormal decomposition processes, a nitrogen-free, toxic substance—possibly acetone, or an allied body with the same reaction—is developed that during excretion irritates the kidneys to the extent of nephritis, exercises a pernicious influence upon the coloring matter of the blood, and alters the activity of the liver cells so that glycosuria follows; that this action on the liver cells may go on to destruction of the hepatic parenchyma, the production of acute yellow atrophy with the formation of tyrosin and leucin, and, through irritation of the brain, coma and convulsions. Stumpf leaves to the future the determination whether this body is the result of an agent of infection derived from without, or whether it is derived from the fetus in utero. Winckel is of the opinion that the predisposition to eclampsia in multiple pregnancy, the fatal effect of the eclampsia upon the fetus, the peculiar rigor mortis of the infants, and, finally, the item that with the death of the child in pregnancy the danger to the mother grows less—that all these facts indicate a close relation between fetus and mother in the genesis of eclampsia.

Gustav Braun¹ has reported several cases of eclampsia in which hemorrhagic hepatitis was the most significant lesion.

Suggestive as the observations of Stumpf and Gustav Braun are, facts are as yet too few to admit of generalization. The importance, however, of more exact analyses of the blood and urine in all cases is obvious.

Passing mention must be made of the Traube-Munk-Rosenstein hypothesis, if for no other reason, because Dr. Freer, of Chicago, some years ago performed certain experiments that led him to

¹ Verhandlungen des ersten deutschen Gynäkologen Congresses in München: Archiv. f. Gyn., Bd. xxviii., Heft 8, p. 471; Münchener med. Wochenschr., 1887, Nos. 35 und 36.

² Sitzungs-Berichte der Geburtshüllich-Gynäkologischen Gesellschaft in Wien. I. Jahrgang.

broach a similar supposition. Traube's view was that the hydremic state of the blood incident to pregnancy, and increased by the loss of albumin in Bright's disease, constituted the important predisposing factor; that the blood-pressure is elevated on account of the heart-hypertrophy of pregnancy; that, under the reflex stimulus of uterine contractions, blood-pressure becomes so great as to cause edema of the middle brain and cerebral cortex, resulting in pressure anemia that is followed by coma and convulsions. Rosenstein modified this hypothesis by the omission of the effect of the loss of albumin by the blood. He merely eliminated the nephritis. These notions, as well as the conception of eclampsia as a form of acute epilepsy, at the present possess a purely historical interest.

The notion that eclampsia is an example of infection is by no means new. The fact that the disease is always sporadic, never epidemic, renders this hypothesis improbable. But it is quite possible that the Bright's disease may be due in certain cases to infection. Out of five cases recorded by Doléris and Pavey, two were ascribed to an infection nephritis. In these cases, it is claimed that the infection of the blood pursued a course parallel with the convulsive seizures. The experiments of E. Blanc,¹ with microbes isolated from the urine of an eclamptic tend to support this view. Inoculations of rabbits with these microbes were followed by convulsions in some cases, and by infection nephritis in others. Upon this phase of the subject, however, Dr. Bayard Holmes has something to say.

About thirty cases of eclampsia have come under my own observation in hospital and private practice. In all of these cases the etiology was perfectly clear. They were all examples of uræmic convulsions, conditioned upon Bright's disease.

DR. BAYARD HOLMES made the following remarks

ON THE RELATION OF BACTERIA TO PUERPERAL ECLAMPSIA.

It is well known that the subcutaneous injection of normal urine does not result in symptoms of uræmic poisoning, while these symptoms are exactly simulated by the injection of nephritic urine. The demonstration of acute nephritis in fatal cases of puerperal uræmic convulsions is not wanting. The bacterial origin of many other cases of acute nephritis is most emphatically demonstrated (Babes: *Bact. untersuch u. septische Processe*, etc., Leipzig, 1889). We have heard to-night that bacteria have been demonstrated in some cases of uræmia. On no other supposition or theory have uræmic convulsions been satisfactorily explained. A toxæmia is conceded by all to be the prime condition of the disease. The normal constituents of the urine do not produce this toxæmia; the products of nephritic urine do produce it. Nephritis is usually, if not always, present. This nephritis is sometimes, if

¹ La Semaine Médicale, 1889.

not always, due to bacterial thrombosis or embolism. This is the only adequate cause which has up to the present time been demonstrated in any case. It is in perfect accord with the origin of nephritis under other circumstances.

As there must in all cases be a point of entrance of the bacteria and diminished local resistance, we may be asked to go a step further and demonstrate these. The point of entrance is probably the intestinal tract. The low state of vitality which is manifest in many pregnant women, living after the manner dictated by modern civilization, results in such a low state of general resistance that teeth are invaded and abscesses appear elsewhere. Mechanical constipation produces in the intestinal tract points of arrested circulation or pressure atrophy where invasion takes place into the lymphatics of the mesentery. These bacteria do not need to be pathogenic under ordinary circumstances. They circulate freely in the blood until they come to the kidneys and other organs, where mechanical capillary stasis is present from the pressure of the enlarged uterus, assisted perhaps by improper dress. Under such circumstances, otherwise harmless saprophytic bacteria multiply in the non-resisting but still living tissues of the kidney, and the products of their growth produce coagulation necrosis and all the less marked appearances of nephritis. The extent of these changes need not correspond to the severity of the symptoms. In case the infection produces a very toxic ptomaine, the lesion may be only just enough to prevent its rapid elimination; while, in case the ptomaine is less toxic, the symptoms may be trivial until the suppression of urine is almost complete.

DR. DANIEL T. NELSON read the following paper on

DIAGNOSIS AND PROGNOSIS.

Puerperal eclampsia is an acute epilepsy in a pregnant woman, due to an acute anemia, rarely a hyperemia, of the brain, produced by poisons circulating in the blood, such as urea, cholesterolin, and the like, produced by defective excretion by the kidneys, intestines, and skin. The disease occurs most frequently in first pregnancies. The pregnant uterus pressing upon the ureters tends to narrow their calibre and prevent the discharge of urine into the bladder; or the tissues about the uterus are unyielding, elongating the ureters as the uterus grows, and so preventing the flow of urine; and, in a reflex way, the pressure of the uterus upon sensitive nerves and ganglia in the pelvis, and perhaps from morbid conditions in the uterus and ovaries, acting directly upon the brain, especially the medulla and pons, all the reflex centres being normally exalted in their sensitiveness during pregnancy to facilitate the ordinary processes of nutrition.

The disease is more frequent in irritable and highly sensitive organizations, and in those of corpulent habit, for, in such, excre-

tion is not as thoroughly performed as in others. Sudden suppression of the action of the skin, too, is not an infrequent cause of the disease, causing substances of a poisonous nature to be retained in the blood which would otherwise be thrown off. Puerperal eclampsia, then, is not properly a disease, but rather a symptom of diseased conditions, particularly of the excreting organs.

With this brief description of the disease, the diagnosis is usually easy.

When fully developed, the disease is not likely to be confounded with any other, except true or chronic epilepsy.

The history of the case and the fact of pregnancy will easily distinguish puerperal eclampsia.

Convulsions arising from disease of the nervous centres are likely to be local, affecting only the portions of the body supplied by these centres.

Diseases of the meninges of the brain or spinal cord, producing convulsions, are likely to be attended with pain, fever, and irregular nervous disturbances, which readily point to the location of the disease.

The determination of whether the eclampsia is due to acute or chronic disease of the kidneys is of little moment in diagnosis, but is of great importance in the prognosis of the case.

The most important diagnostic symptoms for the physician to note and rightly interpret are the various nervous disturbances, such as severe headache, dizziness, persistent nausea and vomiting, diarrhea coming on suddenly and watery in character, insomnia, special senses disordered—as dimness of vision, spots floating before the eyes, ringing in the ears, disagreeable taste and smell—disturbance of motor nerves, irregular spasms of voluntary and involuntary muscles, reflexes unusually active.

Edema, general or local, temporary or continuing, should always attract attention to the condition of the excretions, and examinations of the urine be made regularly and frequently. Defective excretion by the bowels and skin should likewise be noticed and corrected.

Poisoning by lead, arsenic, or the preparations of mercury is to be considered, but the history of the case is likely to eliminate these readily.

The examination of the urine is of the greatest importance to determine the presence or not of albumin and the amount of urea excreted.

The intelligent and observing physician is likely to readily detect the premonitory symptoms if he has the opportunity to look for them; but, unfortunately, he is usually first called only after the first spasm has occurred and when the diagnosis is already made.

This is a disease, surely, in which prevention is the best cure.

The prognosis is always grave, and can only be fully determined when the extent of the lesions in vital organs is known and the rapidity with which the excreting organs are carrying off the poisonous substances.

The more frequent the convulsions, the longer they continue, and the greater their severity, the more serious is the prognosis.

The continuance, after delivery, of serious organic disease of the kidneys and lesions of important structures in the brain as the result of the convulsions, will complicate the ultimate recovery and render the prognosis uncertain.

The diminishing frequency and severity of the spasms, with the free secretion of urine, with urea increasing and albumin decreasing, and a subsidence of the nervous disturbances, will enable us to hope for a speedy and complete recovery and no return in subsequent pregnancies.

DR. EDMUND J. DOERING read the following paper, entitled:

PROPHYLAXIS OF PUERPERAL ECLAMPSIA.

Albuminuria during pregnancy may not cause puerperal eclampsia, and eclampsia may occur without a renal lesion, but the fact remains that the danger of puerperal eclampsia is manifoldly increased when a pregnant woman suffers from renal insufficiency, whether the same be organic in character or due to mechanical interference with the renal circulation. It is our duty then to carefully examine from time to time the urine of every pregnant woman. It is unfortunately true that in the majority of cases of pregnancy the urine is never examined. It is also true that in the majority of cases in which the urine is examined, the heat or nitric-acid test constitutes the so-called "urinary analysis." The fact seems to be utterly ignored that the urine may be and often is entirely free from albumin and still indicates the existence of a serious renal lesion. We have not done our duty to our patient, particularly if she be a primipara, till we have determined the exact amount of urine secreted in twenty-four hours, and ascertained the actual specific gravity, so as to know the amount of solids passed, together with a careful chemical and microscopical analysis of a mixed sample. Occasional faint traces of albumin occur in a large percentage of pregnant women, and are of no special significance, provided the quantity and specific gravity of the urine remain normal. But the persistence of albumin, or the presence of casts with or without albumin, or a diminished amount of solids passed in twenty-four hours, indicates the necessity of prompt prophylactic treatment to ward off eclampsia. The patient should be clad in woollen garments. Extra precautions should be taken to prevent chilling of the body by exposure to cold or wet. The diet should consist principally, if not entirely, of milk, which can be consumed in quantity varying from two to four quarts per diem. Fruit and fish may be permitted, also fari-

naceous articles of food and some vegetables. Meats are to be used sparingly, if at all; moderate exercise may be advised. The therapeutic indications are, of course, to keep up a free action of the skin, bowels, and kidneys. Warm baths should be regularly employed. The bowels should be moved daily, and an excellent laxative for this purpose is cream of tartar in tablespoonful doses every morning. Compound jalap powder has also a favorable action. In anemic subjects, iron in the form of Basham's mixture given several times daily will be of decided benefit, being tonic, diuretic, and diaphoretic in its action. Infusion of digitalis, in combination with acetate, citrate, or bitartrate of potassium, is also an excellent remedy. The patient should be advised to partake freely of fluids, and Vichy, Buffalo Lithia, and Londonderry Lithia waters are specially indicated. If there is great nervous irritability, rectal injections of chloral at night will be of great service. Finally, if we have exhausted all these measures and the symptoms become worse, the dropsy increases, or the central nervous system becomes involved, the induction of premature labor may have to be seriously considered or become absolutely necessary.

DR. CHARLES WARRINGTON EARLE read the following paper, entitled

THE TREATMENT OF PUERPERAL ECLAMPSIA.

The attack has appeared. The parturient, either before or during or after labor, is in the midst of one of the most formidable and perilous complications which ever occur to one in her condition. There is danger to both mother and child, and the treatment of this terrible complication should engage our earnest attention.

Notwithstanding everything which has been suggested by my colleague in the way of prevention, and the improvement in treatment which has been made during the past twenty years, puerperal eclampsia still remains the *bête noir* of obstetrics.

According to many of the older teachers, one-half of the patients attacked with the disease died; and in all the cases which Fordyce Barker could collect up to 1855, thirty-two per cent of all occurring before and during labor, and twenty-two per cent of those after delivery, ended fatally. In this gentleman's practice to 1874, the mortality had diminished to fourteen per cent.

Any treatment decided upon must necessarily be varied according as that treatment is administered to one early in pregnancy, during parturition, or after delivery.

The means for treating this terrible condition may be ranged under the following headings. And it is not intimated that every drug which has been used, or every procedure suggested, is mentioned.

I will consider very briefly:

Evacuants and Detergents.

Nerve Sedatives and Anodynes.

Anesthetics.

Bleeding.

Operative Measures.

The remedy indicated, or the procedure which offers the best result, differs according to the time of the eclamptic attack. The treatment, then, whatever it is to be, should be considered during the following periods:

Before, during, and following labor.

Whatever the time may be, however, or what plan of treatment it is proposed to inaugurate, it goes without saying that nothing of an exciting nature which can be avoided should be used; that the surroundings should be such that good air and freedom from incumbrances as regards clothing, etc., are insured. If vaginal examinations are objectionable to her, no more than simply enough to acquaint ourselves with the absolute progress of the dilatation of the os should be made. Indeed, every cause which may produce worry on the part of our patient must be avoided.

We must remember that, however well demonstrated the uremic theory may be to us, there have been during all times a goodly number who believe that puerperal eclampsia is a neurosis, and that any reflex irritation of the spinal system is liable to exaggerate the convulsions.

Treatment during Early Pregnancy.

Sometimes the attack has been expected; for while exceptionally it takes place without any premonitory symptoms, usually there is edema, or a terrible neuralgia, or a condition of the nervous system that has caused the experienced accoucheur to expect it. The patient has had preventive treatment. It does not suffice: the convulsion is on. We must now shape our treatment for this case with the knowledge that a single convulsion may cause the death of a patient, and that it is the rule that usually in two days either a cure is effected or a serious complication makes its appearance which will prove fatal.

As I remarked before, the convulsion is on. As rapidly as possible these things should be done: A little chloroform given; the patient put into a hot bath, and a non-irritating cathartic—one which will produce a large, watery stool—administered. Whatever procedure may be adopted later in the case, it appears to me that the foregoing treatment is plain. Of course, as adjuvants, a hypodermic of morphia may be given, and a dose of chloral either by mouth or rectum. The question will also arise at once as regards the expediency of using pilocarpine as an aid in the elimination by the skin of retained excrementitious matters. The value of this remedy will be discussed later.

More than a passing notice should be given to the hot baths. They are extensively used in many of the largest obstetrical hos-

pitals. "The patient is placed in a bath-tub filled with water at a temperature slightly above 99° F. The tub is then covered with a heavy blanket, leaving the face free, and the temperature of the water is gradually elevated to 110° or 112° F. She remains in the bath thirty minutes. A towel wrung out of ice-water and placed upon the head relieves any distressing cephalic sensations. While in the bath the patient drinks large quantities of water. Upon emerging from the bath, she is covered with a warm sheet and enveloped in an upper and lower layer of thick blankets, so that only the face is exposed. Within a very few minutes free perspiration is observed. The sweating is continued for two or three hours. According to the gravity of the case, the hot-water bath may be repeated once daily for an indefinite period. The relief of all threatening symptoms under this simple plan of treatment alone is surprising. Sometimes the hot-water bath acts as an efficient excitant of uterine contractions, and premature labor is induced."

Concerning the usefulness of chloroform and chloral, there is in my mind no doubt. Their administration has been opposed, but in my judgment they are exceedingly useful.

Some of the most brilliant recoveries in the literature of obstetrics have come about from hypodermics of morphia, rectal administration of chloral, and the inhalation of chloroform. I should not fail to suggest, even in a case where the convulsions are occurring early in pregnancy, the propriety of venesection. I am informed, however, that this particular line of treatment is to be presented by others. I will probably refer to it later.

In the case I have supposed, if the convulsion persist for a long time or if the attacks come frequently, the question of the induction of labor would come to my mind. Here, however, I approach a subject concerning which authorities do not by any means agree.

The question comes fairly before us early in pregnancy, or any time before labor commences with the os not dilated. Are we justified in attempting an operation the irritation of which may possibly produce a convulsion, and the completion of which may not cause a suspension of the attack for which the operation is commenced?

I range myself along with those who would consider the propriety and justifiableness of carefully—while meeting all therapeutic indications—evacuating the uterus of its contents.

Treatment of Eclampsia during Labor.

Some of the factors entering into the treatment of convulsions during pregnancy or before full term, and which are not fully agreed upon by the profession, do not engage our attention at this time; for instance, the induction of labor, either in the interest of the mother or child. Labor has already commenced; the convulsion is present.

To me there is no question as to the propriety of hastening labor by every means possible, and the possibility of producing a convulsion by artificially dilating the cervix is so small that it need not be entertained.

In a considerable number of cases which I have collected from the journals published during the last two or three years, and which do not enter into any of the tables published in the text-books, there are some data favoring venesection at the time. Indeed, Swayne says that in thirty-four cases occurring in his practice, bleeding, anesthetics, and delivery—in the order named—have given the best results.

Jas. Murphy (*Lancet*, 1886), however, in the treatment of five cases with pilocarpine as the principal remedy, aided by other adjuvants, has saved all his patients. His plan is to inject subcutaneously from one-fourth to one-third grain of this drug every six hours, and his results are certainly remarkable. In one of his cases thirty-three convulsions occurred during the seventh month, but after the use of the pilocarpine premature labor was averted and a healthy child born at term.

Returning, however, to consider bleeding, it should be said, according to Kucher, that this procedure has been entirely abandoned in the Vienna clinic, and the same author says that it is very doubtful whether it ever has any beneficial effect whatever. In fifty-two cases, upon which he bases his paper, only seven were fatal. This is an excellent showing when we consider that the mortality was formerly twenty to thirty per cent. They depend in the Vienna hospitals upon diuretics, diaphoretics, and cathartics. It is also believed that the indication is to expedite labor by all reasonable means, but that too active interference is more dangerous than the eclampsia.

The use of veratrum viride, since the days of Fordyce Barker, has had its advocates, and more recently, in a discussion which took place at the Ninth International Medical Congress, it found a considerable number of advocates. Dr. Jewett, of Brooklyn, in an experience of twenty-six cases, seems to show that in veratrum viride, if given early, we have a well-nigh certain means to prevent death from puerperal eclampsia.

Some one has said if the pulse be kept at 60 by veratrum no convulsion can take place. Dr. Jewett gives the drug hypodermically, and keeps the patient quiet and in the recumbent position.

Breus has had remarkable results from the hot-pack—seventeen cases and only two deaths. It is claimed for this treatment that it does not induce abortion or premature labor. Patients are immersed in the hot bath, and its action continued by the hot pack in blankets.

In many cases the results are not as good as they might be, from the fact that the details of treatment are not fully and faithfully carried out.

If chloroform is used it should be continuous and its effect profound. If chloral is to be used, and cannot be given by mouth, thirty or forty grains should be given by rectum, and repeated in twenty minutes, if necessary.

With the present light on the subject, it appears to me that for convulsions at full term the hot bath, anesthetics, and a termination of labor as rapidly as can be done without injury to the soft parts, is the treatment for to-day.

For Convulsions after Delivery.

Here factors are wanting which were present while the woman was in labor. The uterus has been emptied of its contents, but the convulsions continue. The induction of labor or rapid delivery by version or forceps cannot now be considered. Control eclamptic attack with anesthetic, and eliminate with all rapidity by the skin, bowels, and kidneys. In addition to the hot bath, we now have the pilocarpine, aided by what seems to me the best cathartic—elaterium. To produce the full effect of the last-named drug, it seems to me that we should have at our command as potent a hypodermic tablet as we have of pilocarpine or morphia. This is particularly true for cases who cannot swallow.

To sum up, then, we have:

1. For convulsions before delivery: The hot bath, morphia and pilocarpine hypodermically, chloral and bromide of potassium by mouth or rectum; veratrum viride to reduce heart's action and lower arterial tension; possibly bleeding; the induction of labor.

2. For convulsions during labor: The hot bath, morphia, chloral, anesthetics; a rapid delivery with all precautions.

3. For convulsions after labor: Control eclampsia by anesthetics, and rapid elimination by all the emunctories.

DR. WILLIAM E. CLARKE read the following paper on

BLEEDING IN PUERPERAL ECLAMPSIA.

From the earliest dawn of medical science to within the memory of some of the Fellows of this Society, blood-letting was almost universally regarded and employed as one of the most valuable of remedies. In the discussion, this evening, of the curative treatment of puerperal eclampsia, especially in reference to venesection, the subject officially assigned to the writer, it may be well to inquire how much the present popular disfavor of the remedy and its disuse by the profession is due to popular clamor, to the caprices of fashion, to the vagaries of pseudo-practitioners, or how much to the advancement of pathological knowledge and the deductions of sound scientific research.

Popular clamor and the blind zeal of the pseudo-scientist and misguided reformer have had very much influence in the matter. Samuel Thompson, the founder of the so-called Thompsonian system, author of "New Guide to Health and Life and Medical

Discoveries," published about 1825, had a great following. A large number of illiterate men took upon themselves the title of Thompsonian doctors and commenced to practise. They all took strong ground against blood-letting and all antiphlogistic treatment.

Homeopathy has had a powerful influence upon an entirely different class—a class of much more social influence, with imaginations far more exalted, but with reasoning faculties developed in inverse proportion. Blood-letting in any form has been the salient point of all their attacks on the lines of rational practice. The secular papers took up the cry, and Horace Greeley, the sweetheart of the reformers of the period, in his capacity of editor joined in the cry of Blanche and Tray that the blood was the life, and to take away the blood was to take away the life.

Some thirty-nine years ago a petition was presented to the Legislature of New York, praying that blood-letting might be made a penal offence. But blind and unreasonable prejudice against bleeding has not been confined to the non-professional or to the illegitimate practitioners. A few in the regular profession have vied with the charlatans in their efforts to bring this remedy into reproach.

In a paper read before the section of Obstetrics and Diseases of Women of the American Medical Association in 1884, on "Laceration of the Female Sexual Organs Consequent on Parturition: their Causes and Prevention," the distinguished writer, Dr. Gross, took strong grounds in favor of the lancet. In the discussion that followed, one member, after stating that he had never bled a woman—thus virtually confessing that he knew nothing of the effects of such a procedure—advanced the argument that, according to Dr. Gross' views, a woman ought to be born with a lancet about her neck to meet the difficulty. This sage remark was received with rapturous applause, but no one ventured to inform the section whether their all-sufficient remedies, chloroform and morphine, had ever been found in that particular locality.

Another member, a gentleman of prominence in the profession, speaking of a woman who, as he expressed it, had received poison into her system and fever had been produced, asked the question, "Why bleed such a woman, lessen her vital powers, take away her blood, which is 'the life thereof'?" thus basing his pathology on the Pentateuch. In his advocacy of sedatives, he gave no reason why he did not let the life flow with all the force and volume possible instead of damming it up in the vessels of the brain by sedatives. Even he, the strongest critic of the paper, said he would bleed in some cases of puerperal convulsions. Allison, in 1856, assumed that the type of diseases had changed from a higher to a lower type, and that while bleeding and other antiphlogistic remedies twenty years before were useful, at that period they were harmful.

Dr. Bennett contended that there had been no such changes in the type of diseases; that bleeding and other antiphlogistic remedies were contra-indicated, in all internal inflammations, by principles of sound pathology.

To the writings of these men, together with Dr. Flint of our own country, is probably due, more than to any other respectable medical writers, the changed views among the regular profession. Still, Dr. Bennett, in the discussion with Dr. Watson on this question, agrees with the latter that we should so bleed as to secure its advantages and avoid its disadvantages.

The writer of this paper, during a stay in Washington, made a very thorough examination of the literature of this subject in the library of the Surgeon-General's office. He found that the consensus of a very large majority of the eminent members of the profession who wrote on the subject, during this war on blood-letting, is in favor of it, particularly in selected cases of puerperal eclampsia. He further believes, from his clinical observation in a practice of more than forty years, that in cases of puerperal eclampsia where there is turgescence of the vascular system, or in cases of uremia, bleeding is called for to relieve vascular tension and to remove damaged blood from the system.

In 1855 the writer reported to the Chicago Medical Society a case of eclampsia that was promptly relieved by bleeding, after chloroform had been used, only apparently to increase the plethoric condition of the patient. The report was published in the *Medical Journal* of June of that year.

The writers of that day usually described puerperal eclampsia under three distinct varieties: hysteric, epileptic, and apoplectic. The position taken in the report was that chloroform was the only proper remedy in the first variety, and bleeding in the two others.

To the principles recorded in that paper the writer still adheres, and in some ten cases, four of which have been seen in company with Fellows of this Society, the lancet has been used with happiest results. In one case, also seen with a Fellow of this Society, no blood was taken, as it was regarded as hysterical, but the convalescence was far more tedious than in any of the others. In no case coming under his observation has he seen any of the evils attributed to the abstraction of blood, but he believes that he has seen suffering and death which might have been averted by the timely and judicious use of this much-abused but potent remedy, if the attending physician had not been prejudiced or had had the moral courage to resort to its use. The attention the subject is receiving from the profession is a hopeful indication that venesection is soon to resume its place as a valuable therapeutic measure.

DR. EDWARD WARREN SAWYER, in opening the discussion, said:—I think I express the sentiment of the meeting when I say that the subject has been presented to the Society in the most

masterly way. I think its clearness and the interest in the subject have been increased by the plan adopted by Dr. Jaggard in the presentation of the subject.

Concerning the subject of eclampsia I have but two points to speak of, and both concern its etiology. I recall very distinctly a most interesting conversation upon this subject that I had with the late Joseph Freer, who had experimented extensively with reference to ascertaining the condition of the urine in eclampsia, and the effect of that urine upon the lower animals when injected into the veins. His chief conclusion was that eclampsia was not due to uremia as much as popularly thought, but that it was really due to anemia of the brain; this condition being effected by the edema of the brain of the eclamptic subject.

The second point which my practice has demonstrated to me effectually is that the danger or the fatal results of eclampsia are not proportionate at all to the amount of anasarca presented by the patient. In fact, of the four cases of eclampsia of which I have a very distinct recollection, the two fatal cases scarcely presented any anasarca, while the cases that recovered presented an anasarca that was never before seen by me. In both of these cases the degree of anasarca was such in the genitals that the patient could not possibly approach her knees—such a deformity I had never before seen; yet both cases recovered. In one, vision was nearly lost for a number of weeks; in the other, hearing was greatly impaired. In the fatal cases, there was less anasarca than is usual in the primipara, and it was limited to the feet. In one of the fatal cases, the urine had been examined during pregnancy and no albumin found, but within five minutes of the birth of the child she had eclampsia followed by death.

DR. W. H. BYFORD.—I had hoped that I could shirk the responsibility of engaging in this debate, but I have been so much entertained with the papers read that I feel it would hardly be fair in me to decline saying something on the subject. These papers have thrown me into a kind of reverie or retrospection, causing me to look back to old times and to follow the subject down from the years of which Dr. Clarke speaks to the present time, recalling what the pathology of the disease was at that time and what the therapeutics were as compared with the present. At that time, doctors used to consider the pathology of eclampsia as apoplectic in character. We thought there was either a very great congestion of the brain unattended by effusion, or that there was great congestion of the brain attended by effusion of blood or serum, and in the dissections of cases at that time it was a very frequent thing to find clots of blood in the substance of the brain. Another thing was quite remarkable then, and I think if we watch cases of that kind that die we will now see symptoms indicating edema of the lungs. Those lesions seem to have been the anatomical pathology of the disease at that time. We had no idea, as at present, of the *etiological pathology* of eclampsia. I do not remember that anything was taught upon the subject of etiology, especially anything separate from the anatomical conditions of which I have spoken. If we reasoned upon the subject at all, we supposed that the pressure of the uterus upon abdominal vessels and those of the chest through the diaphragm caused hyperemia of the brain because of the partial exclusion of the blood from those vessels, both venous and arterial. Pressure upon the abdominal aorta prevented the arterial blood from being thrown

so plentifully into the inferior extremities, and diverted it to the brain. We believed that this resulted from the pregnancy, and that the full effect of the cerebral hyperemia thus caused depended upon some constitutional condition with which we were not acquainted. That kind of reasoning upon the pathology of eclampsia led us to a practice which is very different from the practice of the present time. Tracing the disease to a congestion of the brain or to an effusion of blood in the brain, we believed the best preventive measure and the best curative measure was evacuante—something to lessen the quantity of blood in the system and at the same time prevent the large quantity of blood being thrown into the brain through the circulation, giving Nature time to correct herself by delivery, etc.

I am caused to remember, since sitting here, some cases that to me were exceedingly interesting, especially in view of the therapeutics of the present time. I remember one instance of the wife of a neighbor being taken with eclampsia of a very severe character at the end of the eighth month. She was a strong, healthy woman, and, as was the custom at that time, I bled her sitting up, until her pulse became small and her face pale, and other evidences of syncope presented themselves; I gave her, as a thing calculated to carry the blood away from the brain, and which was a very common prescription then, croton oil. This, of course you know, produces great revulsive influence from the head to the intestinal canal, and in that way we supposed relieved the symptoms. That woman had two convulsions after she was bled the first time; then she was bled a second time in the course of two hours after the first, and she had no more convulsions; the oil also operated at that time. She went to the end of the nine months, and was delivered of a fetus that had died at the time the convulsions occurred.

To sum up my experience in that kind of treatment, I will say that I had pursued it until I came to Chicago, twenty years from the commencement of my professional career, and I do not remember that I had seen a patient die of eclampsia until I came here. The first case I saw was in consultation with Drs. Johnson and Freer at one of the hotels here. The patient had eclampsia and was only about six months pregnant. We discussed the subject of treatment, and I was astonished, as she was a strong woman, that nothing was said about bleeding; but venesection had been dead several years in this part of the country, and I could not induce them to think that it was a proper remedy. That was the first patient I ever saw treated without venesection, and the first patient I saw die. I agree perfectly with the sentiments expressed in the paper on the etiology of the disease. I think it is perfectly rational to trace it to a kidney origin; I think that our pathological observations have proven that there is poison of some kind produced by retention of some of the constituents of the urine. Something occurs in the kidneys that prevents their depurating influence, and there accumulates in the blood a considerable quantity of excrementitious matter that ought to be eliminated, which seriously affects the nervous centres. It is an interesting thing to speculate upon, at least, if we cannot demonstrate what are the exact effects produced upon the nervous centres by the circulation of that poison through the vessels of brain and cord. While I believed that the circulating poison was carbonate of ammonia, I could easily understand its exciting influ-

ence on the brain. It is possible the same irritating effects are produced by other excrementitious substances, causing irritability of the brain that gives rise to these convulsions. I do not at all subscribe to the idea that cerebral anemia is necessary to these convulsions in the beginning; I am sure it is not present as the case advances. These cases begin with epileptic symptoms, and they generally end with apoplectic symptoms. I believe in the beginning there is not much vascular excitement in the brain, but the terrible convulsions and the great cramps, especially in the chest, produce such a determination of blood to the brain as to produce organic effects in it.

As to my present ideas with reference to the treatment of eclampsia, I agree with Dr. Earle in the majority of his conclusions, and shall not express them in detail. But in the general way of treating these patients, leaving out the considerations of delivery, I believe it is better for us to begin, especially in patients of strong plethoric habit, by copious venesection. In the old days when venesection was done, we did not count the ounces of blood as a reason for bleeding no more, but we bled to produce an effect, and sometimes we bled three or four pints at a time. And I think now if we can have a patient early, and the pregnancy has not terminated, the best thing to do is to bleed to reduce the quantity of blood, and consequently reduce the force of the circulation and acrid character of the blood by the rapid absorption of lymph which follows. After this is done we should give an active cathartic to work off any accumulation in the intestinal canal and produce revulsion. During the whole time after bleeding we should keep the patient constantly under the influence of chloral. Chloroform bears no comparison, in its effects upon eclampsia, with chloral, and one reason is that you do not know how much chloroform the patient is inhaling. Certainly there is no sense in holding a sponge of chloroform to a woman when she is in convulsions, for respiration is suspended until the convulsion ceases; it is impossible to get it into her system while the air is thrown out of the lungs and the chest closed by clonic spasms, but you can give chloral by the stomach or by the rectum, and keep up its influence to a recognizable degree. These remedies must be supplemented by the treatment which Dr. Earle so intelligently presents. I think very favorably of pilocarpine. I think it is a most excellent addition, because it serves to promote the secretions to such a great degree.

DR. J. S. KNOX.—I did not have an opportunity to hear the papers, and therefore can only report my personal experience in the management of eclampsia. My introduction in medicine was under the direction of an old and skilful country doctor, who was decidedly in favor of venesection. He used to bleed in labor for irritable os, for rigid perineum, for the prodromal symptoms of eclampsia, and he always bled for eclampsia. I never knew him to lose a case, and he told me he never had lost one when he bled early enough. I was impressed, therefore, with the idea that venesection was the treatment for eclampsia. I have always followed it, and in ten cases that have come under my observation, seven were bled and recovered, three were not bled and died. My treatment has been to bleed, as Dr. Byford expressed it, copiously, drawing from fifteen to twenty ounces of blood from a large orifice, and I never yet have seen a woman so anemic that I hesitated to employ this method. After the bleeding, I give half a

grain of morphine hypodermically, and medicines to keep the bowels and kidneys acting freely.

DR. F. HENROTIN.—I did not hear the first papers on the etiology of the disease. In the first fifteen years of my practice I never met with a case of puerperal convulsions, but in the last five or six years I have happened to come across quite a number of them. And I have in my own mind divided those cases into two varieties. On the one side are the cases that give rise to symptoms long before delivery; cases that are accompanied by a great deal of edema, both of the genitals and of the limbs; cases that draw attention to the fact that albuminuria is probably present, which is usually found to be the case. And it always seemed to me that those cases having such symptoms were best treated by venesection, catharsis, and pilocarpine. On the other hand there are a few extremely severe cases occurring in patients who had shown no edema, who usually had shown no symptoms whatever before delivery, but were supposed to be perfectly healthy, and in whom the convulsions occurred either at the time of labor or several hours afterwards. In two of these cases I have seen venesection tried without any effect whatever, while, in the cases that gave rise to edema, venesection, which has always been followed almost as a routine practice by me, has always seemed to be of a great deal of benefit. Those patients that were affected very late in pregnancy or after delivery, that did not give any symptoms whatever where albuminuria was not present at all, seem not to have been affected in any way whatever by venesection, but seem to have been helped by morphine and narcotics; while those that resembled more particularly cases of the uremia that we get after scarlatina, those cases of supposed large, white kidney in which albuminuria is a prominent symptom, those cases seem to be affected favorably by venesection, and in such cases coming under my observation, with one exception, all recovered.

In regard to drugs in this disease, I would say that I believe from personal experience that the giving of pilocarpine hypodermically, while the patient is unconscious, is capable of actually drowning the patient by the excessive flow of saliva and increased pulmonary secretion, so that I would advise caution in its administration.

DR. H. P. MERRIMAN.—We all realize the extreme importance of this trouble, and it seems to me that what has been said during this evening covers almost the whole ground.

There are one or two additional thoughts, however, of very little importance probably, that have been running through my mind as I have been listening to the papers and discussion. One of these is that we have, I think, cases of convulsions in puerperal women that are like the cases of convulsions in infants, not due so much to direct blood poisoning, and not due so much to centric lesions, as they are to irritations that are remote from the nervous centres. I cannot help thinking that sometimes we have, from the irritation of the gravid uterus, a certain amount of trouble that would be removed simply by the removal of the fetus from the uterus. I do not think that this has been mentioned as a cause of the convulsion, although we are referred to it in the treatment of the disease. But it strikes me that, as often the ingesta of infants has produced convulsions by its irritation of the intestinal canal, so we find that there is a state of irritation of the nervous system from the presence of the fetus, acting as the cause

of convulsion. The remedy has already been mentioned—that of delivering the child.

I have been so fortunate as to have very few cases of puerperal convulsions. I have had one fatal case, and only one, and this was in a woman whom I had attended in a previous confinement in which she had convulsions, and in which the use of chloroform and rapid delivery by forceps was sufficient to stop the convulsions, which did not return; the child also lived. But in her next pregnancy, about two and a half years later, she had a sudden attack of convulsions at six months. I was sent for, and found her having one convulsion after another. I called in Dr. Roller in consultation, who came, and we went to work and delivered her as soon as possible. There was a reasonable amount of flow from the uterus after delivery, but the convulsions continued; she never rallied from them, and died about six hours after the delivery of the child. She was not bled, nor were any of my other cases. I had believed that other remedies were better, and I neglected to use venesection. I still believe there are many of these cases that do not call for venesection; many of them are hysterical, due to extreme nervous excitement on the part of the woman. There is not a great vascular tension, and the call is more for sedatives, anesthetics, and for evacuating the uterus than for blood-letting.

DR. ELY McCLELLAN, U. S. A. (present by invitation).—A medical officer in the army has of necessity but few opportunities of seeing these cases, but even in our isolated lives occasionally great emergencies come upon us. I can simply speak as far as my experience goes in such cases, and it is limited, but it is decidedly in favor of the use of chloroform and of rapid delivery. The few cases that have occurred in my experience have terminated favorably by the induction of labor, by version carefully performed and as rapidly terminated as possible. Then the therapeutic indications are those which have been laid down. Only three or four cases, in a service of nearly twenty-one years, have fallen to my lot, and with the treatment outlined they have all terminated favorably.

DR. W. W. JAGGARD, in closing the discussion, said: It is scarcely possible to accept everything that Dr. Bayard Holmes has said. Normal urine is toxic, and when injected into the veins of rabbits it will produce convulsions.

It is possible that in certain cases the nephritis of pregnancy may be an example of infection. But the sporadic occurrence of the disease, the apparent selection of primiparæ, and cases of multiple pregnancy, tend to show that the operation of this factor is not general. Staude calls attention to the predisposition to the disease observed in case of pelvic contraction and where the fetal head is of uncommon size. Pressure on the pelvic blood-vessels causes an increase in the general blood-pressure that ultimately reacts upon the kidneys. Eclampsia appears among the rich and poor alike. Its victims are oftenest young, healthy, blooming women in whom it is reasonable to suppose the physiological resistance of the tissues is not notably lessened.

Dr. Nelson and Dr. Merriam have touched upon an important item in prognosis. What is the probability as to recurrence of eclampsia in subsequent pregnancies? A guarded answer must be returned. In general, eclampsia in a first pregnancy seldom means a recurrence of the disease in succeeding gestations. When all symptoms of nephritis disappear within a short period

after delivery, the probability of immunity becomes almost a certainty, so that eclampsia in a first pregnancy, per se, is not an indication for the prevention of conception nor for the induction of abortion. If, however, symptoms of Bright's disease, no matter however latent, persist, the patient should be warned against conception. In case of conception and the development of albuminuria early in pregnancy, I am of the opinion that the induction of abortion ought to be seriously considered.

The value of the hot-water bath is greatest in the prevention and least in the cure of eclampsia. Used as described by Dr. Earle—the Vienna plan—it is by far the most efficacious procedure that we possess in the prophylaxis of the disease.

As to the treatment of eclampsia during pregnancy, the weight of evidence and opinion is decidedly in favor of an expectant plan of treatment, unless abortion or premature labor is imminent. Wait until the seizures are well over and until convalescence is established before interrupting pregnancy. If, however, abortion or premature labor is imminent, the indication is to aid in the evacuation of the uterus.

In eclampsia during labor, three indications are clear:

1st. After the insertion of a gag and the protection of the woman's body by pillows and the like, the indication is to control the convulsions by profound narcosis. The choice of remedies is not so important as that the narcosis shall be deep and continued. Chloroform is by far the best agent to control the seizures, while the narcosis can best be maintained by large doses of chloral and the bromides exhibited *per rectum*. Winckel,¹ who relies exclusively upon chloroform inhalations and chloral *per rectum*, has had only seven deaths in ninety-two cases. As at present informed, this result is better than that obtained by any other plan of treatment on record.

2d. The second indication is to evacuate the uterus as rapidly as may be consistent with the safety of the mother and child. Experience teaches that the convulsions cease when labor terminates in about one-third of the cases, in one-third they grow less frequent and severe; only in the remaining one-third do they continue without change.

Early in the first stage of labor, before effacement of the cervix and dilatation of the os, puncture of the membranes is commonly the best means to accelerate labor. The escape of the liquor amnii is not infrequently followed by an abatement of the convulsions. Later in the first stage, after effacement of the cervix, digital dilatation of the os externum is often indicated. It is seldom necessary to incise the os externum.

Delivery may be completed by the forceps or version and extraction, according to the conditions of the concrete case.

3d. The third indication is to eliminate the retained excrementitious products of the urine by diaphoresis, purgation, and diuresis. The hot-pack is probably the best means. I think Dr. Earle will encounter some difficulty when he attempts to put an eclamptic in the hot-water bath, besides running the risk of drowning his patient. The vapor bath, by means of the alcohol lamp, is efficient and easily exhibited. Pilocarpine must be used with extraordinary caution, only in the beginning of the disease, when the coma is light, the pulse full, and the respiration

¹ Lehrbuch der Geburtshülfe, 1889, p. 590.

free. Deep coma, weak heart, and beginning edema of the lungs are absolute contra-indications. The evidence upon this point, brought forward by Fordyce Barker, Kleinwächter, Säger, Welponer, Schramm, Klotz, Carl Braun, Winckel, Schroeder, and others, is decisive. The unqualified praise this remedy has received this evening must be taken *cum grano salis*. Dr. Henrotin is right in saying there is grave danger of drowning the woman in her own secretions.

Finally, there comes the question of bleeding. Nearly every Fellow of the Society is present to-night and has taken part in the discussion. Every speaker has commended bleeding in the strongest possible terms. There may have been slight differences of opinion upon other points, but all unite upon the item of venesection. Bleeding is the specific treatment of eclampsia. But no one has given a reason why he bleeds, neither has any one presented a series of cases that demonstrate the value of phlebotomy. There are at least three good reasons why we should not bleed in uræmic eclampsia. 1st. The procedure is without important effect upon the demonstrated cause of the disease. The amount of excrementitious material that can be eliminated by bleeding is comparatively trivial. Blood-pressure cannot be depressed for any considerable period of time, unless the patient be dangerously exsanguinated. Hemorrhage into the brain, as a consequence of puerperal convulsions, is an extremely rare finding. The indication for bleeding in eclampsia is not stronger than in the convulsions of Bright's disease in the male and non-pregnant female. None of the Fellows present, I am certain, would bleed in the latter affection.

2d. Clinical experience teaches that much better results are now obtained without bleeding than were formerly observed when venesection was commonly practised. In support of this proposition, the verdict of the Vienna (Kucher) school of obstetrics must be cited: "In the Vienna clinics, where the results of treatment are far better than anywhere else," blood-letting has been completely discarded. Winckel's (Munich) statistics have already been mentioned—ninety-two cases, seven deaths. In Schroeder's clinic (Berlin), bleeding is no longer practised, on the ground that better results are obtained since its rejection.

3d. The weight of opinion is opposed to venesection. In this connection, names are to be valued like coins. C. Braun, Gustav Braun, Josef Spaeth, F. Winckel, Schroeder, have expressed themselves in no equivocal terms as opposed to blood-letting.

If blood-letting in eclampsia is unphilosophical, if it is opposed by clinical experience and the weight of professional opinion, upon what grounds can this practice be tolerated? If the Fellows must bleed, let them "bleed the woman into her own veins" by the use of *veratrum viride*.

The experience of one individual in private practice or in our small lying-in hospitals does not count for much. It can have but slight weight in influencing the conduct of others. Yet, as the personal experience of each member has been the basis of his remarks this evening, I feel like adding my own testimony. Up to the present, in about thirty cases of eclampsia, I have not observed a clear indication for venesection. My observation of the cases of others in which bleeding was allowed has failed to convince me of the value of the procedure. Some of these cases were a little remarkable and cannot be fairly cited in this connection, since at the same time with free bleeding the patient's blood was

saturated with chloroform, morphine, chloral, and the bromides. It was a question as to the cause of death, whether it was the Bright's disease, the bleeding, or the artificial toxemia.

In the treatment of eclampsia one item has been neglected. It is necessary to use all precautions against septic infection that so frequently occurs.

TRANSACTIONS OF THE OBSTETRICAL AND GYNECOLOGICAL SOCIETY OF WASHINGTON.

Stated Meeting, March 8th, 1899.

DR. A. F. A. KING in the Chair.

DR. J. FORD THOMPSON read the paper of the evening on

EXTRA-UTERINE PREGNANCY.¹

DR. G. W. JOHNSTON, in opening the discussion, said that he thought all would agree with him in stating that since the foundation of the Society no subject had been presented that was of greater importance. Such cases as that reported were not so uncommon as was once supposed; the diagnosis was difficult, and the result often fatal. The choice of operation was also a matter of consideration—there being two principal methods, the one directly curative, the other producing amelioration if not permanent relief. For these reasons the subject was an instructive one to discuss.

The mortality of ovariectomy had been reduced by the dissemination of knowledge resulting from discussions on the subject. The profession had been taught to make an earlier diagnosis and to refrain from tapping. Likewise, by discussing the subject of extra-uterine fetation, the members of the profession at large were educated to look for, recognize the condition, and to actively interfere before such a disaster as rupture of the sac could occur.

The treatment of extra-uterine gestation had received more attention than its diagnosis. All cases should be studied with accuracy in order to place the symptomatology and diagnosis on a firmer basis. Certain typical symptoms have been described as indicative of this condition. Janvrin, of New York, has arranged them as follows: abdominal pain, symptoms of pregnancy, menorrhagia, a pelvic tumor, discharge of decidua, and changes in the condition and situation of the uterus.

Dr. Johnston had recently met with a case which showed the reverse or negative side of the question, and he desired briefly to refer to it.

The patient was 22 years of age and had been married one year. On the 17th of last January, shortly after the cessation of the monthly period, she was taken ill. She suffered from nausea

¹ See original article, page 810.

(most marked in the morning), frequent micturition without apparent cause, and colicky abdominal and pelvic pain accompanied by cramps in the left leg. The pain was sudden, violent, and accompanied and followed by prostration. She had two, or perhaps more, of these attacks weekly, and during the intervals was well except for the nausea and bladder irritation.

Two weeks after the cessation of her menses, she had an unusually severe attack of pain with vaginal discharge containing some shreds.

About two weeks later, a still more violent attack, with general symptoms amounting almost to collapse. This occurred at night, and the physician sent for suspected the existence of extra-uterine pregnancy—a suspicion that was strengthened by detecting, on examination, the presence of a pelvic tumor.

Dr. Johnston saw her for the first time the next day, February 7th. The breasts were tender, the areolar signs negative, the vaginal wall was not discolored, the uterus slightly enlarged and anteverted, but the cervix and lower segment of the corpus were neither changed in shape nor softened. On the right side of the uterus and posterior to the broad ligament was a round, exquisitely tender, semi-fluctuating tumor as large as a lemon.

The case was kept under observation from February 7th to February 19th, and during this time there were several attacks of pain. February 19th, the tumor was found to have shifted its position and was in Douglas' cul-de-sac; an enlarged tube was now discovered extending from it outward and to the right. There was no pulsation in the sac.

While the speaker was aware that in this case there were many discrepancies, and while many features were lacking which would aid in the making of an assured diagnosis of ectopic (tubal) pregnancy with threatened rupture of the sac, yet it was mentioned because the symptoms presented were quite as distinctive of the existence of this abnormal condition as in certain cases which had recently been described in this Society and elsewhere, and in many which he had read of. He did not forget, at the same time, that any form of pelvic tumor may occasionally give rise to the most complex and misleading symptoms.

When abdominal section was performed, on February 20th, a tubo-ovarian cyst, retort-shaped and as large as a lemon, was removed.

When this subject was discussed recently at a meeting of the Medical Society, Dr. Johnston stated that he had seen attention called to the fact that it was dangerous practice to use the uterine probe in suspected extra-uterine fetation. The passage of the instrument might excite uterine contraction, and this action, extending to the tube, might cause rupture of the sac. In one case reported, uterine contraction came on after sounding, and the decidua membrane was expelled. E. Fraenkel, after a more disastrous experience, warns against such practice of using the sound.

Dr. Thompson's case illustrates several important things. It, among others, shows what might occur after the use of electricity. He thought this case was one of tubal pregnancy which had ruptured into the broad ligament; the fetus had perished, decomposition set in, and the pus burrowed under the peritoneum and found its way into the bladder.

Tait denies that a diagnosis can be made before rupture, and

all of his work has been done at the time of rupture or afterwards.

All that has been learned in connection with treatment before rupture has been accomplished in this country. The application of electricity originated here, and primary laparotomy—i.e., laparotomy before rupture of the sac—has been done three times, and all were by American gynecologists.

Several cases were referred to in the discussion mentioned. Dr. Lamb reported that in the case he examined the tumor was situated high in the abdomen. Dr. Smith failed to discover any tumor by digital examination, although at the post-mortem one was taken out that was as large as an orange.

In reports of cases that have been removed, the tumor was invariably found situated low in the pelvis. If they be sometimes placed high, much of our objective symptomatology falls to the ground.

DR. SMITH.—The difficulties in diagnosing extra-uterine fetation are many. When the tumor is discovered, how can we decide its nature? If, after rupture, the fetus escape from the sac, it will fall into Douglas' pouch. If rupture occur without escape of the fetus, we must look for the tumor on one or the other side of the uterus. In his case, which had been referred to, the abdominal walls were tense and sensitive. He made the examination with the expectation of finding a retroverted and incarcerated pregnant uterus. The symptoms, vomiting, and pain diffused over the abdomen, pointed to such a conclusion.

The symptoms presented by the case of Dr. Johnston, as just reported, were those of membranous dysmenorrhea, until the fact of the presence of a tumor was disclosed.

With the recognition of the tumor, the difficulty in making a diagnosis was increased.

Indeed, the difficulties in making a differential diagnosis in these cases were so great that he thought, in view of the lack of pathognomonic symptoms, it was more creditable to be mistaken in the diagnosis than it was to arrive at a correct opinion through a "lucky guess."

DR. BUSEY had very little to add to the subject as presented by Dr. Thompson. He would, however, take exception to the statement made by Dr. Smith that it was more creditable to fail than to make a diagnosis. He thought the diagnosis should be made in at least eighty-five per cent of all cases, although this may be difficult in some and impossible in others. Drs. Thompson and Johnston favor laparotomy, no matter at what period and under what circumstances the diagnosis is made; and they justify it upon the theory that it is complete, less dangerous, and does not subject the woman to the discomforts and ill-results of other methods. Dr. Busey admitted that if rupture had occurred the operation was imperative, and even if the diagnosis is clearly made before rupture the operation is justifiable; but if the diagnosis is uncertain, treatment by electricity is preferable. In Hanks' statistics of twenty cases treated by electricity, there were two deaths; in the eighteen the treatment was satisfactory. In the eighteen cases, there was no history of subsequent discomfort and bad results. If the diagnosis is made at or before the third or perhaps the fourth month, before rupture, the treatment by electricity is safe. There is no positive evidence of death of the mother from the application of electricity for the killing of

the fetus in extra-uterine fetation. The argument in favor of laparotomy based upon the injurious effect of electricity is fallacious. Electricity is preferable in those cases where there is strong presumptive evidence, and yet the diagnosis of extra-uterine fetation is not definitely settled. Laparotomy would not be justifiable unless the diagnosis of ectopic pregnancy was positive.

Dr. Smith has referred to the statement of Reeve that he would not apply electricity to kill the fetus unless he had his laparotomy instruments at hand; but in the same paper Reeve subsequently says that he prefers electricity.

Another objection urged against electricity is that it would cause rupture of the sac, but no such accidents have been reported.

His principal object in rising was to take exception to the dogmatic statement that laparotomy should always be performed.

He was convinced that Dr. Thompson's case was one of ectopic pregnancy; and besides, her husband had stated that she had been passing some long, bony-like things from the bladder for a long time.

DR. G. W. JOHNSTON remarked that Dr. Smith had said that but for the objective signs of tumor the case which Dr. J. had reported might have been one of membranous dysmenorrhea, but Dr. Johnston believed that the whole history of the case was opposed to any such supposition.

In speaking of the use of electricity in ectopic pregnancy before rupture of the sac, while for many reasons he was inclined to prefer laparotomy, still he could easily imagine circumstances in which the use of electricity might be preferable, just as the most ardent ovariologist sometimes tapped.

The whole question of diagnosis was so obscure that he was inclined to question the validity of many so-called cures from electricity. He could recall one case of ectopic pregnancy cured by electricity which had subsequently proved to be an ovarian tumor and not an ectopic pregnancy at all. Dr. Johnston said that in his own case the uterus was anteflexed and anteverted.

DR. BUSEY.—There had been two fatal cases reported after treatment by electricity—one by Janvrin, and the other was at the time suffering from an acute gonorrhea. In Janvrin's case, rupture had taken place before electricity was applied.¹ He asked Dr. Johnston if he had understood him to say that in his case the womb was anteflexed.

DR. G. W. JOHNSTON meant that the womb was in the normal position of anteversion and flexion, and also of pathological ante-position.

DR. BUSEY.—Would not such position, together with the absence of changes in the cervix and size of the womb, exclude ectopic gestation?

DR. JOHNSTON admitted there were several weak points in his case. He had seen the woman for the first time on Feb. 7th and had operated Feb. 20th. She had menstruated for the last time on Jan. 14th, and at the time of the operation the period was nine days overdue. If the woman had become pregnant immediately after the January period, the tumor should not have been so large

¹ Gynecological Transactions, vol. xiii., pp. 376, 377, 396.

nor the symptoms of impending rupture so pronounced. If before this time (which was considered possible but not probable), then changes in the uterus, such as have been described by Hegar, would doubtless have been apparent.

THE PRESIDENT.—Dr. Thompson had drawn attention to the treatment of the different varieties which seemed very important. The trouble in diagnosing such conditions is that they are seldom suspected. When the woman first complains of pains, then a careful examination should be made; but this is usually deferred until rupture has taken place. He thought ballottement would be a valuable sign in the earlier months.

DR. G. W. JOHNSON.—The tumor in his case was exquisitely sensitive and could hardly be touched.

DR. THOMPSON could not accept the argument presented by Dr. Busey in favor of electricity, as he did not believe in its use in such cases. He could not understand why killing the child by electricity was different from other methods, since the subsequent history and course are the same. There is no evidence that electricity is safer than puncture. It would appear as if some operators applied electricity when they had not the courage to puncture or apply lethal drugs. In those cases where such success is claimed for electricity, there is probably no fetus there, as in Mann's case.

Then, if the ectopic pregnancy is positively diagnosed, which is the proper method of treatment, electricity or laparotomy? The opponents of laparotomy make strange exceptions. If there is any other kind of tumor in the abdominal cavity, they would advise an exploratory incision; but if tubal pregnancy is suspected, "hands off!" He believed that if laparotomy were performed in the early cases, almost all would be cured. This method would relieve the woman of all possible dangers. Electricity may be more convenient, but it is not less dangerous than other minor methods.

As to the difference between tubal and abdominal pregnancy, he would state that an abdominal pregnancy was an obstetrical curiosity, but at least one case proved its possibility. Almost all cases are tubal according to all recent authorities. It is true that the fetus may be found in the abdominal cavity at the post-mortem, but it gets there by rupture. He, however, admitted the possibility of abdominal pregnancy. The surgeon could not determine whether it was interstitial, tubal, or abdominal, but was satisfied to know that it was an extra-uterine fetation to induce him to operate. In the interstitial variety, it may be necessary to perform hysterectomy. But the surgeon should proceed if it only amounted to an exploratory incision. The whole subject is clear to the surgeon, who would perform laparotomy for tubal pregnancy if he knew it to be such. In suspected cases he would hesitate; he would get the best advice at hand, and when the tumor was recognized he would operate. When a woman becomes pregnant, she knows it; when the fetus is extra-uterine, she realizes that something is wrong; the pregnancy is irregular in its whole course; there are subjective signs; added to this is the opinion of the physician and surgeon. With all this before him, he would perform laparotomy; and he believed that such a course would be established in a few years.

DR. BUSEY.—If Dr. Thompson is so decidedly in favor of lapa-

ratomy, why did he not perform it in his own case, in which there was strong presumptive evidence of ectopic pregnancy?

He had antagonized the statements of Drs. Thompson and G. W. Johnston because the statistics show that electricity has been satisfactory in many cases. Laparotomy is not only justifiable but imperative if rupture has taken place; and if the diagnosis is clear before rupture, it should be performed; but that does not prove that electricity is of no value.

DR. THOMPSON.—He had not operated in his case because it was a year after conception when he first saw her. He saw none of the signs of pregnancy, and was not sure of the diagnosis until the bones were passed.

On motion, the discussion was closed and the Society adjourned.

Stated Meeting, March 15th, 1889.

DR. J. TABER JOHNSON, *President, in the chair.*

DR. M. F. CUTHBERT read the paper of the evening:

THREE CASES OF DIPHTHERIA IN WHICH PAPOID WAS USED.¹

DR. G. N. ACKER, in opening the discussion, said he knew very little practically about the use of papoid in diphtheria, as he had not had a case in which to test its efficacy since Dr. Bromwell called the attention of this Society to its value in diphtheria. He had, however, had some experience with trypsin; he detailed several cases in which the drug proved beneficial. He saw very few cases of diphtheria; but he did see many cases of follicular tonsillitis—a disease called by some diphtheritic sore throat. In an epidemic at the Children's Hospital in this city, he used trypsin with good results. Some time ago he had three cases of diphtheria in one family, and one, who had had chronic heart disease, died. It was possible for him to call diphtheria by some other name. He was sorry to learn that Dr. Cuthbert did not confirm the views expressed by Dr. Bromwell in his paper.

He thought it very questionable whether the removal of the membrane in diphtheria was necessary. As he did not believe in the membrane being primary, he did not think its removal would affect the course of the disease. He believed it to be a constitutional disease with local manifestations. Of course those who believed it to be primarily local must rely on the removal of the membrane to prevent septic infection. In the septic form of the disease, the removal of the membrane might do some good. In this form papoid was the best remedy, because it possessed solvent and germicidal properties, which Dr. Cuthbert's experience confirms.

As to the nature of diphtheria, which was still a mooted question, he coincided with the opinion that it was constitutional, and he believed in constitutional remedies.

The diagnosis is not always easy; there were the so-called diphtheritic affections, which were either diphtheria or not. Dr. Cuthbert's cases were undoubtedly diphtheria.

He had no criticisms to make on the treatment of the cases, except that he would not have used cold in the first case. As the effect of the papoid was so variable, he was of the opinion that it might not have been pure.

¹ See original article, page 818.

As to the subsequent infection from the patch, he thought the doctor was not correct; the patch could not infect. The length of time a patch will remain depends very much upon the constitution of the patient; in the scrofulous, it may remain for a long time. He had seen a case in the Royal Ophthalmic Hospital of London, in which the patch was on the left lower eyelid; it had been removed several times, but as often returned. Some years ago, Dr. A. C. Adams had shown a case to him in which the membrane had remained for several months. From the successful treatment of Dr. Cuthbert's first case, we can entertain great hopes of saving patients.

In the second case, turpentine had been used as a preventive. Its internal administration is also recommended. Sunin considers it very valuable in conjunction with constitutional remedies and stimulants.

Dr. Acker treated diphtheria with milk punches, iron, quinia, and strychnia. He used potassium chlorate as a gargle, but not internally, as he was afraid of its effects on the kidneys. He did not believe in the necessity of mercury; where large doses of calomel were given every hour, he thought the patient got well in spite of the dosage.

Dr. SMITH was very sceptical about new remedies for diphtheria, and one is very bold to propose them. He thought the disease produced the membrane, and not the membrane the disease. If the theory be correct that diphtheria is due to a germ, and the membrane the result of systemic infection, then how can we destroy the disease by removing the membrane? He could not see any more reason in such a process than it would be to expect to cure small-pox by removing the scabs. In Dr. C.'s first case, he tried too often to get away the little piece of membrane. He thought that great harm was due in many cases to efforts used to remove the membrane. The violence done by local applications to the child's throat will not be compensated for by the result of any topical remedy. Unless the membrane invades the larynx, he expects his cases to recover. He did not make one application in fifty cases of throat affections. He gave the details of a case on 23d street. The girl had viewed the corpse of a neighbor's child who had died of diphtheria, and had herself contracted it. Dr. S. S. Adams had seen this patient with him, and had said that she would probably have paralysis, which proved true. In this case, he made no applications to the throat, but gave a mouth wash of borax and myrrh. All physicians who use papoid also use constitutional remedies; consequently, he thought it was begging the question to say that papoid cured the disease.

Dr. PRENTISS.—Diphtheria had been discussed so often that it was almost threadbare; but there were some points in the paper worthy of discussion. He thought Dr. C. deserved great credit for the presentation and discussion of his cases. He would take exception to the general antiseptic treatment. From such a use of carbolic acid and turpentine not the slightest effect would be produced upon the germ, as it would be too much diluted with air to kill the feeblest germ, and, besides, they smell bad and suggest to others the presence of infectious disease. He had carried antiseptics too far, as there was no necessity for washing the walls and woodwork; the upholstery and bedding should be well aired, but there was no necessity for such wholesale destruction of goods. As to local treatment, he would take exception to the remarks of

Dr. Smith. He believed in local treatment, especially if the case is seen before the membrane has extended to the nose and larynx. He believed that the disease was at first local and secondarily constitutional. There is not much constitutional infection when the disease is confined to the larynx, owing to the scarcity of absorbents; but in the naso-pharynx, where the absorbents are plentiful, septic material is rapidly absorbed and constitutional infection is great. If we could prevent the spread of the membrane, we could save more patients than if we allowed it to extend. Some time ago he had reported thirty cases of diphtheria treated consecutively without a death. He had been severely criticised for reporting such happy results, and was accused of having mistaken them for tonsillitis. He had treated diphtheria with the carbolyzed spray from the steam atomizer, which prevented the spread of the membrane. His subsequent experience had been just as favorable. If he could not use the spray, he applied locally a one-per-cent carbolic-acid solution, and he also gave two grains of calomel every two hours until it operated, and he believed it had a local effect upon the membrane as it passed over it. Where there are glandular enlargements, he used mercurial ointment. He also advised supportive treatment with nourishing food and free stimulation.

The diagnosis is of great importance. Some call almost all cases of sore throat diphtheria. The membrane in diphtheria should be differentiated from the exudation found in follicular tonsillitis. Almost every case of laryngeal diphtheria which he had seen had died. He had seen three successful tracheotomies. He had recently seen a statement that intubation was far more favorable in laryngeal diphtheria than tracheotomy.

DR. BROMWELL congratulated Dr. Cuthbert on a well-written and interesting paper.

In the history of his first case, he thought he passed too lightly over its most important feature—the extension of the disease to the larynx. It is exceedingly important, as being a positive proof, if any were needed, of the diagnosis being correct, aside from its being the most fatal form of diphtheria.

It had been his good fortune to see this case, in consultation, from the time when the voice was almost lost and impending suffocation so marked as to almost destroy all hope except that offered by tracheotomy, to the entire disappearance of the membrane from both pharynx and larynx, and he could not agree with the doctor in thinking papoid a failure. 'Tis very true, the membrane on the pharynx resisted the application of papoid, and everything else except strong tincture of the chloride of iron. Trypsin failed equally with the papoid. Probably the papoid used in the first part of the disease was worthless, or may not the membrane have been rapidly reformed?—as at no time when he saw it was it very thick or dense. When the disease extended to the larynx, papoid in solution was constantly sprayed in both pharynx and larynx. In twenty-four hours from the time it was vigorously pushed, the membrane rapidly liquefied and was expectorated in shreds and pultaceous masses. The papoid now used was a new specimen, not the same used heretofore.

The liquefaction or solution of the laryngeal membrane could have been due to no other medicinal cause or therapeutic action, as the only other local means resorted to was the inhalation of the

steam, generated from a pan of water over a small coal-oil stove, which at no time was more than barely manifested in the room by a slight condensation on the window panes. The changes which took place in the membrane in the larynx he thought too rapid to have been caused by the constitutional treatment.

He would congratulate Dr. Smith on never having experienced a malignant epidemic of diphtheria, otherwise he would not have made so dogmatic an assertion as that, so long as the membrane did not extend to the larynx, there was little if any danger of death. Diphtheria may destroy life by a primary septicemia; by a secondary blood poisoning, proportioned to the extent of the membrane in the pharynx and nares—the larynx being in no way involved—or, in some cases, before the appearance of the membrane in either larynx, pharynx, or nares, the patient being knocked down at the very onset of the disease by the virulence of the primary poison, and dying in twenty-four hours from the first symptom of disease. He was surprised to hear Dr. Prentiss take exception to the doctor's antiseptic precautions. Can too much thought or care be given to preventing the spread of contagious diseases, or to destroying all germs of the disease around and about the patient by strict cleanliness and the most improved antiseptic precautions in all pertaining to him, his room, or those who are in constant attendance upon him? In severe or malignant diphtheria, may it not be necessary for the nurses, and also the doctor if he has remained for a long time in the patient's room, his clothing soiled or contaminated by the discharges from the patient's throat or mouth, to change their clothing before going to those not already exposed?

He had known of diphtheria being conveyed to a family remote from the epidemic by a piece of furniture which stood by the bedside of a child who died with malignant diphtheria. Cases of like character have been noted again and again by the most careful and truthful writers. Would it not be far better to mistake a case of tonsillitis for diphtheria, and use the most thorough antiseptic precautions in all pertaining to it, than to treat a case of diphtheria, ever so mild, as a simple non-contagious sore throat, and, by taking no precautions, be responsible for its spread to others?

He saw no objection to its being generally known that a case of infectious or contagious disease was in any house or neighborhood. It would be better to declare it by a flag hung from the windows, as in small-pox, than that it should spread by keeping it secret and permitting persons all unconscious of any danger to visit the house.

DR. H. L. E. JOHNSON said that very few advocated the destruction of furniture, as washing and airing it would usually prevent the spread of the contagium. His practice was surely different from that of others, as he had not seen a case of true diphtheria as described in the books. He had, however, seen some cases that looked like it, but they invariably succumbed to applications of the nitrate of silver. He did not believe in the frequency of diphtheria. He had recently seen a case of supposed diphtheria where the attending physician supposed the child to be dying. He found patches in the throat and the constitutional disturbances of a high fever. He advised the application of nitrate of silver, 20 to 30 grains to the ounce of water, and the following day the patches were nearly gone. He had never seen a

case that did not respond to this treatment. He frequently saw sore throats with patches on the mucous membrane from which there was evident purulent absorption, but such cases did not follow the course set down in the books for diphtheria. He had seen four cases in one family in East Washington: father and three children, one a baby four months old, and another member was said to have died of diphtheria. They all had patches in their throats, constitutional disturbance and enlarged glands, and were of the scrofulous diathesis. They all responded promptly to the treatment by nitrate of silver.

He did not understand what was meant by antiseptic precautions. We could not expect a physician to run home and change his clothing every time he saw a suspicious-looking sore throat.

He deprecated the too frequent use of strong solutions of carbolic acid on mucous membranes, as that drug would cause patches resembling the diphtheritic membrane; ulceration of the mucous membrane would take place, purulent material would be absorbed, and there would be the constitutional symptoms of pyemia or septicemia. He was inclined to the belief that such cases are too frequently diagnosticated diphtheria.

DR. COOK.—What would Dr. Johnson call such patches?

DR. JOHNSON.—Would call them patches resembling diphtheria, but not true diphtheria.

DR. BROMWELL.—Such cases are either diphtheria or not diphtheria. He thought any one, doctor or nurse, who wilfully goes from a patient suffering with diphtheria, scarlet fever, or any contagious disease, to others who are not already exposed, without taking every precaution possible, even if it necessitated a bath and complete change of clothing, against conveying the disease to them, should be considered criminal. It does not necessarily follow that every time a doctor has a patient with diphtheria or scarlet fever he must change his clothing before going to his other patients; his stay in the sick-room may have been short, and neither his person nor clothing soiled by contact with the patient, and the distance in the open air sufficient, before he sees another patient who might be susceptible, to render the danger of conveying the disease slight if any.

DR. H. L. E. JOHNSON.—The propagation of contagious diseases does not necessarily depend upon going from one patient to another, as in the majority of cases no such transmission can be proved.

DR. CUTHBERT, in closing the discussion, thanked the members for the interest they had taken in the cases reported. He thought carbolic acid a very reliable germicide that, when properly used, seldom did harm. When attending contagious diseases, there are certain precautions that should be taken by physicians and nurses to prevent their spread, and in some cases it may be necessary to change the clothing to insure safety. Antiseptic precautions surely lessen the number of germs, even if they fail to kill all; so by reducing the number of disease-producing bacilli, we also diminish the risks of spreading the contagium. If the turpentine affects the inspired air, it would certainly have a beneficial effect upon the infected membrane.

He believed diphtheria to be primarily a constitutional disease with local manifestations later.

The diagnosis is exceedingly difficult in a great many cases, but

he did not think the disease was as rare as Dr. H. L. E. Johnson would have us believe.

In the first case, the papoid was obtained from three of the most reliable drug houses in the city. He regretted that he could not speak more enthusiastically of papoid in diphtheria.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Wednesday, March 6th, 1889.

A. L. GALABIN, M.D., *President, in the Chair.*

Specimens.—MR. DORAN exhibited dentigerous bony plates from a dermoid ovarian tumor.

PRESIDENT'S ADDRESS.

The President delivered his inaugural address, in which he spoke of the present condition of obstetrics and gynecology. He first dwelt upon the prosperous state of the Obstetrical Society. During the past four years, its funds had increased by £600. Its *Transactions* and the work done at its meetings had steadily risen in quality and interest. Of the two branches of medical science with which the Society had to deal, midwifery had for many years advanced the furthest towards scientific perfection. Germany had taken the lead in the great improvements in Cesarean section. Six years ago, the mortality after this operation was as high as from 70 to 90 per cent. Under the new method as practised at Dresden and Leipzig, the entire mortality was but 9 per cent, and, including operations performed outside those cities, the mortality was not higher than 14.8 per cent. Whilst Germany must claim the credit for these triumphs, which rendered craniotomy almost though not entirely needless and unjustifiable, British skill and science had gained much in the field of extra-uterine gestation. Operation at the time of rupture or later was now performed with not discouraging results, promising further improvement. Where the fetus was found free among the intestines, or covered only with a thin amnion, the risk from decomposition of the placenta, if not from hemorrhage, must always remain great. The results of faradization to kill the embryo were questionable. Most satisfactory in the history of midwifery was the application of antiseptics. Once the most miserable hovel was held to be less perilous to the parturient woman than the most palatial lying-in hospital. Now the mortality of childbirth had been reduced in some hospitals to 4 or 5 per 1,000. The President then noted that, at the end of the last century, mortality in lying-in institutions had fallen very low,

but this satisfactory state of things was not maintained, nor restored till very recently. This fact could not be clearly explained. The majority of deaths were still due to puerperal fever, and in relation to that disease there were many obscure points. The President then discussed the character of microbes in relation to the organs concerned in parturition. The most efficacious antiseptic was a 1 in 1,000 solution of bichloride of mercury. A concentrated solution, made with a little glycerin and dilute hydrochloric acid in distilled water, was convenient to carry about and far more reliable than tablets or powders. The President was in favor of the routine use of vaginal douches after labor, but, where there was no skilled nursing, carbolic acid or some antiseptic less dangerous than sublimate was advisable. The President, after dwelling on further questions in relation to puerperal fever and childbed mortality, concluded that the principle of antiseptic midwifery was the prevention of the entrance of virulent germs rather than the destruction of microbes already in the genital tract. The scientific study of gynecology was not so easy as true scientific work in the domain of obstetrics. Many diseases of women were chronic and not fatal, and there were great difficulties in the way of gaining knowledge of the physiology of the uterus and ovaries during sexual life, since the diseases most fatal to women in their prime suppressed or distorted the genital functions. Thus post-mortem research was not satisfactory. In the case of local diseases, again, the obstetrician and gynecologist dreaded necropsies, for evident reasons. In abdominal section for ovarian, uterine, and tubal disease, great progress had been made, and the President congratulated the Society upon a reform which had taken place in London, and, he believed, in the provinces also—namely, the removal of restrictions upon the performance of abdominal operations by obstetric physicians. Lastly, the President spoke of diseases which were yet obscure and must be studied pathologically, such as endometritis, chronic metritis, and ovarian pain in relation to oöphoritis. The distinction between normal and pathological dilatation or atrophy of the Graafian follicles should be carefully determined. The Fellows of the Society, however, would never fail to walk in the paths of scientific research and clinical observation.

For this inaugural address a vote of thanks was proposed by DR. MATTHEWS DUNCAN, seconded by DR. GRAILY HEWITT, and carried unanimously.

ON THE RELATION BETWEEN CHLOROSIS AND MENSTRUATION: AN ANALYSIS OF TWO HUNDRED AND THIRTY-TWO CASES.

DR. W. STEPHENSON, professor of midwifery, University of Aberdeen, the author of this paper, observed that, in the rapid progress of uterine specialism, chlorosis, in its relation to menstruation, has been too much neglected. This constitutional disease

has been investigated by the physician and the pathologist, but not by the gynecologist. The paper is based on an analysis of 232 cases carefully noted by the author. The cases are divided into two groups: the first, where the illness was primary and occurred before the twenty-third year, comprising 183 cases; and the second, where the attacks were of the nature of relapses after a period of good health: these number 49 cases. Chlorosis is regarded as due to a constitutional state; but it is shown that the diathesis is not necessarily associated with an impairment of the development of the body, and is not, to any marked degree, connected with defective health previous to the onset of the disease.

First is considered the influence of the chlorotic constitution on menstruation before chlorosis sets in. Tables are given which show that the tendency of the chlorotic diathesis is to accelerate the age at which menstruation first appears, and that chlorosis by itself is not a cause of retarded appearance of the catamenia. At the same time, in one-half of the cases, the functional activity is defective, and is chiefly characterized by lengthening and irregularity of the intervals and scantiness in the amount of the flow.

The author's statistics are against the opinion that there is a menorrhagic form of chlorosis. In 96.6 per cent, the effect was to diminish the activity of the function; the remaining fraction were complicated with ovarian irritation. In 58.7 per cent, menstruation became scanty and irregular, and in many cases painful, while in 37.8 per cent there was amenorrhea for various periods.

Chlorosis and age.—A table is given which shows that there are two marked chlorotic periods: the one, of primary attacks, from 14 to 21; the other, of secondary attacks, from 24 to 31. The number of cases of the disease presents a regular curve, beginning at 14 and rising steadily to a maximum between 18 and 19, then rapidly falling, to disappear altogether at 22. The tendency to secondary attacks manifests itself first at 24, rises to a maximum between 26 and 28, to again disappear at 32. That there may be a third period is probable, as two cases are recorded at 39 and 41. This law applies to attacks of the disease with distinct intervals of good health between, as distinguished from the simple relapses, after periods of imperfect convalescence, frequently met with after a primary attack.

The curve of menstrual age, compared with the curve of the onset of chlorosis, does not bear out the opinion that "foremost in etiological importance is the period of the first appearance of the catamenia." The fact of a periodicity in the attacks is also against it. The cause of this periodicity is considered; and the general conclusion arrived at is that imperfect evolution of menstruation, as evidenced by scantiness of the flow and irregularity of the periods, is as regular a feature of chlorosis as the imperfect

evolution of the red corpuscles of the blood; that these constants are not related to each other as cause and effect, but are independent one of the other; at the same time there is a close relationship between them whereby the reproduction and development of the red corpuscles of the blood are governed by, or form part of, the menstrual cycle; and that both are influenced by a greater rhythmic action which determines the time and activity of development, growth, and reproduction.

DR. JOHN PHILLIPS observed that in chlorosis the average hemoglobin richness per corpuscle was much reduced. In anemia, there was almost total abolition of corpuscle formation, or very little power of hemoglobin absorption. In chlorosis, iron was always beneficial, if not absolutely curative. In anemia, it was harmful, but great improvement often followed the administration of arsenic. He wished that the Society could be informed whether the blood was examined in Dr. Stephenson's patients.

DR. LEITH NAPIER strongly supported the opinion that chlorosis depended upon climate to a certain extent. He had found it far more frequent in Aberdeenshire than in the south of Scotland. The rarity of the coincidence of chlorosis and tuberculosis was an important fact. Many theories on chlorosis were very questionable. Sir Andrew Clark's doctrine as to the retention of feces and production of ptomaines and leucomaines in the blood was not universally applicable. Bland's pills were very useful, but Dr. Napier preferred a mixture of iron filings, cream of tartar, and licorice powder in equal parts; as much of the powder as would cover a shilling should be given daily. This prescription had been used by an old Berwickshire surgeon for over fifty years with good results.

DR. CLAPHAM could not agree with Dr. Stephenson's opinion that experience showed that there was no menorrhagic form of chlorosis. He had seen that form in a girl aged 18. The hemorrhage was very severe on one occasion, and was only checked by the application of a solution of perchloride of iron to the interior of the uterus.

MR. ALBAN DORAN remembered a similar case in Dr. Routh's wards at the Samaritan Hospital. The patient was 16 and had been subject to chlorosis and very scanty menstruation for over a year. Profuse uterine hemorrhage killed her, though local treatment and transfusion were tried. The ovaries contained very few follicles. No special morbid appearances could be detected in the uterus or tubes; the vessels of the uterine walls showed none of the changes observed by Dr. Percy Kidd in hemophilia.

DR. RUTHERFOORD wondered whether a family history of chlorosis was present in any of Dr. Stephenson's patients. He had seen menorrhagia in two sisters suffering from chlorosis. He noted that chlorosis occurred at or about the "dodging time." He believed that the disease was primarily neurotic.

DR. ROUTH stated that his case, already noted, was an instance of true menorrhagic chlorosis. He had maintained, many years ago at the Medical Society, that a blood poison was present in chlorosis with amenorrhea. The skin assumed the color seen in many blood-poisoning diseases. The poison might be some ptomaine formed in the body. Fecal absorption, which Dr. Routh had shown to be fecal fermentation, might explain the

phenomena perfectly. It produced the chlorotic complexion, sometimes in males. Free purgation often cured chlorosis, as Hamilton had shown long ago. A neurotic dyspepsia was seen in certain cases; this complication Dr. Routh had cured by Apostoli's practice of applying the continuous current to the pneumogastrics in the neck. Then the patients could digest their food. Arsenic and iron and free purgation completed the cure.

DR. PLAYFAIR had seen severe cases of menorrhagic chlorosis. He would have liked to hear more about the causation of chlorosis, and he doubted that any chlorotic diathesis existed. Dr. Stephenson's theory of climatic influences was reasonable; he noted the frequency of chlorosis in Aberdeenshire, and Dr. Playfair had been struck by the number of cases which had come to him from Australia. Overwork should have been named as a certain cause. Dr. Playfair found that chlorosis was common in high-class girls' schools, generally beginning after menstruation had been established. The disease often attacked girls sent to school in Germany, probably through insufficient dietary. Profound impairment of nutrition was probably the basis and essence of the disease; in many cases there was a neurotic element. The nutrition must be improved. Bland's pills, so strongly recommended by Dr. Stephenson, represented an admirable way of administering iron, but they were no panacea. Dr. Playfair had never failed to cure cases of chlorosis of the worst type by systematic rest, massage, and over-feeding.

DR. GRAILY HEWITT believed that the fundamental condition in cases of chlorosis was imperfect and inadequate nutrition, not uncommon even in the higher grades of society. Hence the main object in treatment was to restore nutritional activity. As medicines, mild aperients and iron were required.

DR. T. C. HAYES traced the symptoms of chlorosis to blood changes, the corpuscles being affected and iron deficient. Iron taken in sufficiently large doses for a certain time cured the disease. He had never seen menorrhagia with true chlorosis. Married women might be anemic, but he had never known true chlorosis to set in for the first time after marriage.

DR. DYCE BROWN traced chlorosis to some functional disorder of nerve centres. Malnutrition was not constant; some chlorotic patients were fat. Iron did harm when the temperature was the least above normal. In such cases, arsenic, especially the iodide, was of value. Pulsatilla, no new remedy, was also of great benefit.

DR. HEYWOOD SMITH referred to Dr. Stephenson's argument by analogy from the chlorophyll of plants to the hemoglobulin of the human subject, as illustrating the blanching in cases of chlorosis. He drew attention to the blanching of the majority of old people who had passed the age of sexual activity.

DR. HORROCKS insisted on distinguishing chlorosis, so generally associated with amenorrhea, from the anemia caused by loss of blood, where the menses were not always diminished. The nervous system played an important part in chlorosis. The cessation of menses was a good thing for the patient as long as she remained weak and pale from the disease itself. Iron was good; Dr. Horrocks preferred the powdered saccharated carbonate.

*Wednesday, April 8d, 1889.**A. L. GALABIN, M.D., President, in the Chair.*

Specimens.—**DR. MONTAGU HANFIELD-JONES:** 1. Solid Tumor of the Ovary; 2. Pedunculated Vaginal Cysts. **DR. ADOLPHUS RASCH:** Gangrene of the Bladder from Retroversion of the Gravid Uterus. **DR. PLAYFAIR:** 1. Intra-peritoneal Hematocele, with Hemato-salpinx and Ovarian Tumor; 2. Intra-uterine Polypus with Pyo-salpinx. **DR. W. S. A. GRIFFITH:** 1. Anencephalic Fetus with Partial Ectopia of Heart and Adhesion of Placenta to Cranium; 2. Retention of Urine due to an Ovarian Cyst.

DR. CHAMPNEYS reported

A CASE OF CESAREAN SECTION FOR CONTRACTED PELVIS.

The patient was a secundipara, having had a child in 1882, delivered by induction of premature labor and craniotomy at seven months. She came under notice on this occasion at the end of the seventh month.

She was a dwarf, with well-developed trunk and stunted but otherwise well-formed extremities, without any signs or history of rickets. Her height, forty-four and three-quarter inches; her pelvis of the generally contracted flat variety, with a conj. vera of an inch and three-quarters.

Cesarean section (after Säger) was performed about three and a half hours after the beginning of labor at term, the os uteri being about the size of a florin. There was no bleeding. The operation lasted eighty minutes—forty minutes to the beginning of the sutures, forty minutes to the end of the operation. The sutures were deep silver and superficial silk.

The ovaries were not removed, but the patient was sterilized by tying (and cutting through) both tubes with kangaroo tendon. The child is alive and healthy.

There was no shock after the operation. The temperature (with the exception of slight reaction on the second and third days) resembled a normal lying-in. Recovery was uninterrupted, and the patient is now quite well.

DR. PLAYFAIR said that great credit was due to Dr. Säger for impressing the importance of his antiseptic principle and for his brilliant results. Nevertheless the custom of speaking of "Säger's operation" as something new and different from Cesarean section was not justifiable. It was not likely that the operation in question would entirely replace craniotomy, for it required much surgical experience and aptitude; besides, antiseptics would lessen the mortality of craniotomy also. Like Dr. Champneys, he believed that strong chromic gut was quite safe and suitable for the uterine sutures. The safety of leaving unabsorbable metallic sutures in the uterine tissues appeared questionable. Dr. Playfair agreed with Dr. Champneys as to the question of sterilization. The original proceeding undertaken by Dr. Champneys might involve certain dangers. Removal of the

appendages would have scarcely added to the danger of the operation.

DR. HERMAN noticed that Dr. Champneys did not turn the uterus out of the abdominal cavity in this case, and spoke as though his course in this respect was an "omission." Dr. Herman thought that Dr. Champneys had done well; he had preserved the uterus from needless exposure, and had succeeded in keeping foreign matter out of the peritoneum and in applying the sutures without turning out the uterus. Dr. Herman did not see any object in leaving the ovaries, when the tubes had been tied in order to sterilize the patient. The ovaries were rendered useless and might become the seat of disease. Removal of the ovaries, on the other hand, appeared to involve no bad effects beyond sterilization, which in this case was desired on reasonable grounds.

DR. W. S. A. GRIFFITH maintained that silver wire was the proper material for the uterine sutures. One of the fundamental principles of the improved method of operating was the use of a suture which would remain safe in spite of the frequent contractions and relaxation of the uterine wall. In one fatal case where catgut sutures were used, it was found after death that only the lower two of eighteen sutures remained tied. The remainder were all untied and the uterine wall gaped widely.

DR. LEWERS had witnessed the operation on the case in question. He believed that the sutures were of ordinary carbolyzed gut and not of chromic gut.

DR. GRIFFITH replied that they were chromic gut sutures, but believed that it made little difference of which form of catgut the sutures were made.

DR. HORROCKS believed that the time was coming when a patient would prefer Sanger's operation as less dangerous to herself than craniotomy performed on the child. The number of patients for whom craniotomy was found to be necessary was very small, and it must be remembered that the operation was often performed several times on the same woman. He agreed with Dr. Herman about leaving the uterus in the abdomen. When lifted outside, the organ became anteverted, and so the placental site would more probably be wounded. The elastic ligature was most important; he asked for precise details as to its application. Dr. Horrocks thought that Dr. Champneys' proceeding for sterilizing the patient was preferable to removal of the ovaries. He asked at what point the tubes were ligatured, and dwelt upon some physiological subjects of interest in connection with the question.

DR. J. PHILLIPS said that he had operated in a case where a large fibroid in the posterior wall had become impacted in the pelvis. Eventration of the uterus and the use of the elastic ligature were impossible, yet control of hemorrhage and insertion of the stitches were easy. The patient died from causes apart from the questions under consideration. Two sizes of silk were used for the sutures, and the uterine incision was found perfectly united after death. Dr. Phillips did not favor chromic catgut, and preferred silk to silver sutures.

DR. BRAXTON HICKS remarked that this case did not decide the point as regarded the mother, namely, which of the two operations was the better. In the first labor, craniotomy was successful. Of course the life of the child would be an important point in guiding our decision. In this case, with a conjugate of one and three-quarter inches, there would be considerable difficulty

in delivery unless in experienced hands, and Cesarean section would be much easier and probably safer.

MR. ALBAN DORAN did not understand the precise manner in which the tubes were ligatured. Meddling with the broad ligament, especially in cases of pregnancy and uterine tumor, was dangerous. Complete removal of the appendages would probably be safer than transfixion of the broad ligament and ligature of the tube.

DR. HEYWOOD SMITH dwelt upon the subject of sterilization. He thought that removal of the appendages would have increased the danger of the case. He asked why Porro's operation was not performed; it was less dangerous than Cesarean section and could be finished sooner. When a patient had a highly deformed pelvis, so as to be in great danger during childbirth, the fetus being sure to die, some method of sterilization was needed, whether by Porro's or some other method. Such patients neglected advice, and, when craniotomy was performed, repeatedly allowed pregnancy to go to full term. If a patient of this kind came under observation after the third month, it would be best to recommend her to go to the full time, then Porro's operation should be performed. Thus two lives would probably be saved and further mischief prevented.

DR. CULLINGWORTH spoke in favor of silk ligatures for the uterine wound. In one case, where the patient died from renal complications twenty-nine hours after operation, the edges of the wound were found in perfect apposition. Dr. Cullingworth had more confidence in silk than in catgut, on account of its greater durability and the less liability of slipping. He thought it best to lift the uterus out of the abdomen. He asked Dr. Champneys if it were essentially advisable to cut very slowly when making the abdominal incision. He thought that Dr. Champneys would be able to give a very good reason for preferring, in this instance, Säger's operation to Porro's.

THE PRESIDENT had been led to believe, from the results obtained at Dresden and Leipzig, that Säger's operation was always to be preferred, unless the uterus was already damaged by prolonged labor, and that it might establish its claims to preference even in that case. Some statistics recently supplied to him by Dr. Harris, of Philadelphia, however, show that the record of the last four years gives a mortality of nineteen per cent for the Porro-Cesarean operation, and of over twenty-six per cent for the Säger-Cesarean section. The Säger operation at Dresden and Leipzig had, on the other hand, proved highly successful. Porro's operation had answered better in this country. The President would still prefer Säger's operation as a primary choice, but he thought that these figures showed that under certain circumstances much might be said for the other alternative.

DR. CHAMPNEYS then replied. He stoutly maintained that to Säger belonged the credit of having modified Cesarean section so as to make it a justifiable operation. Statistics proved this fact. Dr. Champneys used deep silver sutures, because silver had been recommended and used by the most successful operators. When he operated, he was not aware that Dr. Leopold had changed the deep sutures from silver to chromic gut, which proved perfectly safe. Still, silver appeared unobjectionable, and if it prevented subsequent pregnancy, as Leopold believed, that was an advantage. Chromic and carbolic gut behaved quite

differently. For the deep sutures, the choice lay between silver and chromic gut; for the superficial, between chromic gut and silk. Dr. Champneys, in tying the tube, chose a spot where it was small and round, before it began to expand towards the ampulla. An aneurism needle could readily be passed close to the tube, without including any vessel or visible structure in the broad ligament. He did not agree with Dr. Herman that removal of the ovaries was a matter of indifference; nor with Mr. Doran that ligaturing the tubes was probably more dangerous than removal of the appendages. Very grave results, mental and otherwise, sometimes followed oöphorectomy. Dr. Champneys thought that it would be quite time to deprecate ligature of the tubes when harm followed. Unless something untoward occurred to this patient, he would do the same on any future occasion. He thought that turning the uterus out of the abdomen was a distinct improvement. The organ could be kept warm by towels, and the practice made it easy to prevent fluids from entering the peritoneal cavity. It also facilitated the insertion of the sutures. The upper abdominal sutures should be closed as soon as the uterus is turned out, and there is plenty of room to replace it after it is emptied. He had not refused to procure abortion in this case, but the patient did not present herself till the seventh month. The choice, in a pelvis of this size, seemed to be between early abortion and Cesarean section. The elastic ligature was a piece of rubber about the size of the little finger. It was tied in a single knot, and the ends clipped by a pressure forceps. Dr. Champneys removed all sponges before closing the uterus. Hemorrhage was almost absent till rupture of the membranes relieved the pressure. It did not occur when the elastic ligature was removed. The uterus was neither hard nor small; it felt as it was a few hours after normal delivery, when that organ was large and not hard, yet no hemorrhage occurred. Dr. Champneys had not been deliberately slow in making the uterine incision, but cut slowly, so that he might see best what he was dividing. When the uterus was completely opened, he proceeded quickly. As to moral responsibility of the patient, the obstetrician gives advice; his duty also was to get the patient out of her difficulty. If she did not take advice about not becoming pregnant again, we had nothing to do with appraising her moral responsibility. The statistics of Cesarean section and Porro's operation were at present in a very confusing condition. He would prefer, in the meanwhile, to compare series performed by a competent operator, but he might say that the statistics in Cesarean section in good hands were so good that he thought that Porro's operation should be restricted to damaged uteri.

REVIEWS.

CYCLOPEDIA OF THE DISEASES OF CHILDREN: MEDICAL AND SURGICAL. Edited by JOHN M. KEATING, M.D. Four volumes. Illustrated. J. B. Lippincott Company, Philadelphia, 1889. Vol. I., pp. 981.

This series of four volumes, which together are intended to minutely cover the entire practice of medicine and surgery as peculiar to, or modified by, the conditions incidental to infancy, childhood, puberty, and adolescence, is arranged as a systematic treatise forming "a digest both of the labors of the past and the attainments of the present," and is written on a plan much in favor to-day, each chapter being contributed by one distinguished for his practical and scientific attainments in the particular division of the subject treated.

The opening volume, as a whole, is excellent, and contains much of individuality and freshness. Following the introductory essay by Abram Jacobi come two on anatomy and physiology—subjects most important as bases from which pathological changes and symptomatology must be studied before they can be either comprehended or rightly estimated. The first, by Geo. McClellan, contains much that is the result of original observation, is concise, and particularly valuable in regional anatomy. It is freely illustrated by photographic plates which, in general, are excellent, though a few sacrifice clearness to absolute accuracy. The second, by Angel Money, is a fair résumé, and shows, as the author states, "that the subject of the physiology of infancy is a comparatively unworked field, but a most interesting one."

Diagnosis is rightly considered of sufficient importance to merit a special chapter to itself, which James Finlayson has made one of the most useful and readable in the volume. Other general subjects treated are: The Influence of Race and Nationality upon Disease, by J. Wellington Byers; Outlines of Practical Bacteriology, by E. O. Shakespeare; Maternal Impressions, by Wm. C. Dabney; Diseases of the Fetus, by Barton Cook Hirst; The Care of the Child at and immediately after Birth, in Health and Disease, by R. A. F. Penrose; Injuries of the New-born, by Theophilus Parvin; Infant Feeding, by T. M. Rotch; Wet-Nurses, by Wm. H. Parish; Diet after Weaning, by Samuel S. Adams; Nursing of Sick Children, by Miss Catherine Wood; Nursery Hygiene, by L. M. Yale; Dentition, by John Dorning; and Puberty, by More Madden.

In the section on Fevers and Miasmatic Diseases, we find papers from William Pasteur, Jos. C. Wilson, Alex. Collie, Roland G. Curtin, J. Lewis Smith, Samuel C. Busey, F. E. Waxham, Wm. A. Edwards, T. M. Dolan, A. D. Blackader, W. T. Plant, Chas. G. Jennings, O. P. Rex, Jos. O. Hirschfelder, W. B. Cheadle, F. Forcheimer, John Guiteras, Rudolph Matas, E. O. Shakespeare, W. W. Jaggard, Horace Jayne, and Roberts Bartholow.

The work is one which must necessarily remain a standard for consultation and reference for a long time to come.

TRAVAUX D'OBSTETRIQUE. PAPERS ON OBSTETRICAL SUBJECTS. By A. AUVAR. Three volumes. Pp. 1,634; three hundred and eight woodcuts. Lecrosnier et Babé, Paris, 1889.

The first of these three volumes is a reprint of thirty-four papers which have appeared in various journals, and which include a great variety of subjects. The second and third contain the following nine papers which now appear for the first time: *Adipose et puerpéralité*; *Mécanisme de la sortie des Épaules (tête première)*; *Tamponnement intra-utérin*; *Contribution à l'étude des annexes ovulaires, et à celle de la délivrance, des déchirures vulvaires après l'accouchement et de la hauteur de l'utérus pendant le postpartum*; *Extraction de la tête fœtale*; *Des présentations en général et, en particulier, des celles du front et de l'abdomen*; *Obliquité latérale de l'utérus gravide*; *Mort subite puerpérale*; *Du diagnostic de l'époque de l'accouchement*.

ABSTRACTS.

1. Billington: *The Differential Diagnosis of Diphtheria* (with colored plate).—A fragment taken, by permission of the author and publishers, from *DIPHTHERIA: ITS NATURE AND TREATMENT*, by C. E. Billington, M.D., pp. 308. Wm. Wood & Co., New York, 1889. See also this JOURNAL for June, p. 668.

The recognition of grave forms of diphtheria, when fully developed, is usually easy; but then the recognition is often too late. It is the earlier stages and milder forms of the disease which need to be intelligently discriminated from certain affections which often bear an astonishingly close resemblance to them; and this discrimination, its essential principle being understood, is in most cases not difficult.

The first essential in this diagnosis is complete and accurate observation.

As our patients are mostly children, the laryngoscopic and rhinoscopic mirrors are, for obvious reasons, not usually very available, nor are they generally necessary, though in some cases, especially in older patients, they may give valuable information.

The patient should be placed for examination directly in front of a window or a good artificial light—if a young child, on the lap of the nurse. Thorough inspection of the throat is now in most cases easy. But some young children will oppose the operation. When this disposition is manifested, the nurse should secure the patient's hands, while some other person stands behind him and holds his head between the palms of the hands. Then, if the lips and teeth are compressed, the tongue depressor (a smooth spoon handle is one of the best) should not be thrust forcibly in, but held in readiness awaiting the opportunity which the child will soon give. It is then slipped deftly between the teeth and well back into the mouth along the dorsum of the tongue, when gentle pressure downwards will cause the child to open his mouth and give a view of the throat. The conformation of the mouth is so different in different persons that it is now and then a matter of some diffi-

culty to obtain a satisfactory view of the throat, especially if the patient resists or is inclined to vomit. In such cases, some perseverance may be necessary. Repeated attempts, with a little interval between them, are less likely to excite vomiting than retaining the tongue depressor in position too long at one time. The very act of "gagging" will throw the tonsils forward, giving a view of their posterior surface.

The throat having been thus thoroughly inspected, perhaps only redness and more or less swelling are observed. Do these denote the catarrhal or ante-membranous stage of diphtheria, or some other inflammation of the throat? The probability of its being the former will be favored by the fact of previous exposure to contagion or to the presence of an epidemic, and by certain characteristics of the throat inflammation, especially a certain intensity and a somewhat abrupt limitation to a particular location, as one tonsil, or one faucial pillar, or a portion of the soft palate: but it is only occasionally that this evidence is very significant. Other forms of throat inflammation, as the follicular, are often one-sided, and I have seen the aspect of the throat in diphtheria, a few hours before the appearance of membrane, in no way distinguishable from that of many ordinary sore throats. Hence a positive diagnosis of diphtheria can but rarely be made at this stage. . . .

The one pathognomonic sign of diphtheria is diphtheritic false membrane. The existence of diphtheria without a *diphthera* is indeed asserted. The reasons for regarding its occurrence as improbable have been elsewhere given. The distinctive characteristics of diphtheritic false membrane have elsewhere been stated. This membrane in the fauces and pharynx is never altogether superficial to the mucous membrane. Though the depth to which it involves the epithelial layers varies greatly in different cases, yet even in its most superficial form it is so intimately connected with the subjacent tissues that if it be scraped or torn away a raw and bleeding surface is exposed.

In non-diphtheritic pharyngitis, we often see whitish patches of pultaceous follicular secretion, or smearings of glairy, tenacious mucus, or ulcers of various kinds covered over with, or surrounded to some little distance by, yellowish or grayish muco-pus, or, in some cases, with a superficial and fragile membranous formation which is undoubtedly a true fibrinous or troupous exudate. These forms of ulcerative pharyngitis have been variously designated as "ulcero-membranous angina" by Da Costa; "common membranous sore throat" and "herpetic sore throat" by J. Solis-Cohen; "confluent herpes of the throat" by Morell Mackenzie; and "drain-throat," a form of septic sore throat attended with ulceration, by S. Solis-Cohen.

The appearances presented by these affections may, at the first view, be very deceptive to the inexperienced eye; but their true character may be readily ascertained by brushing them with a swab, or, still better, throwing a stream of water upon them from a syringe. In aphthous or herpetic angina, the little vesicles and the resulting ulcers are readily recognized when clearly exposed to view by this method, and the fibrinous pellicles just referred to have entirely vanished from the scene, or just enough fragments of them remain to make clearly evident their fragile, superficial, and non-diphtheritic character.

But by far the most frequent occasion of error in diagnosis is the very common affection known as acute follicular or lacunar tonsillitis. The tonsils are irregularly ovoid bodies, the surface of which is penetrated by a varying number of slit-like or circular orifices of a system of internal cavities,

crypts, or lacunæ, from which numerous follicles branch out into the substance of the gland. "The crypts of largest size and greatest depth are, as a rule, found in the middle part of the tonsil. The crypts are generally filled, more or less, with a yellowish substance composed of fat molecules, loosened pavement epithelium, lymph corpuscles, small molecular granules, and cholesterin crystals, which probably proceed from retained and decomposed epithelial matter, and perhaps, now and then, from the bursting of follicles whose cells have increased by proliferation and have undergone a retrograde metamorphosis and fatty degeneration" (Delavan).

Acute follicular tonsillitis occurs sporadically in connection with ordinary catarrhal pharyngitis, endemically from various local insanitary conditions, and epidemically. In this last form it is undoubtedly a specific disease, and is probably in some degree contagious. I have been led to this last conclusion from having so often seen it go through families of children, successive cases occurring at intervals of one, two, or three days, just as occurs with diphtheria or scarlatina.

Follicular tonsillitis is not a milder grade of diphtheria, but is a totally distinct disease. Diphtheria, it is true, may supervene upon follicular tonsillitis as upon other catarrhal affections, but then it is usually, at least, only after the latter has run its course. As this requires only a few days, it is not strange that the two affections have been supposed by some to be related.

Follicular tonsillitis differs from diphtheria in not causing constitutional poisoning, either septic or specific. It is not accompanied with nephritis (except as any febrile catarrhal affection may occasionally be), it is not followed by paralysis, and I have never known of a fatal case.

The onset of follicular tonsillitis is undistinguishable from that of diphtheria in the amount of febrile and nervous disturbance which accompanies it. Its second stage, that of follicular exudation on the inflamed tonsil, may closely resemble diphtheria. Its third stage, which occurs after two or three days, is that of the disappearance of this exudation, exposing in its place peculiar appearances of erosion or excavation in the surface of the tonsil. In the second stage, or that of exudation, we may often see whitish or yellowish points projecting, or liquid oozing from one or more of the lacunal orifices of the tonsils. The diagnosis is then easily made, for these appearances are pathognomonic of follicular tonsillitis. It is made easy in other cases by the evidently soft and pultaceous character of the deposit on the tonsil, and by its lying loosely and superficially on its surface, from which it is easily removed by rubbing it with a swab.

There is a smaller proportion of cases, but yet very numerous in the aggregate, in which the diagnosis is much more difficult. These cases are thus described by Dr. G. M. Lefferts: "Have you not often seen in these cases of follicular tonsillitis an aggregation of the grayish-white pultaceous masses which block up the mouths of the diseased and occluded crypts to such an extent that not only is an apparent but a real pseudo-membrane formed—one thickened by the products of cellular growth and decay (fungi and bacteria), and rendered coherent by the inflammatory hyperplasia? A membrane which may occupy only a part of the tonsillar surface appears here and there in patches, or, more rarely, covers it entirely. The appearance is not an unusual one, and the attendant constitutional disturbance well known."

Dr. Lefferts in this connection refers also to the infectious catarrhal ton

sillitis, which has been described by Fox and other English writers under the name of "spreading quinsy," which is essentially an inflammation of the tonsils, extending more or less into the pharynx, and sometimes to the neighboring submaxillary and cervical glands. It is essentially a fifth-disease, is communicable, is attended with a certain amount of anemia and depression, the mortality from it is slightly greater than that from ordinary tonsillitis, and it is never followed by paralysis. According to Fox's observations, it is never accompanied with a well-marked membrane. In this respect, my own observations have differed from those of Dr. Fox, as I have seen more than one epidemic of an affection answering in all other respects to the description just given, in which the occurrence of quite a firm membranous formation on the tonsil was not uncommon.

While the patches in follicular tonsillitis are more usually composed of the conglomerate follicular exudation above referred to, spread out and inspissated, they are not infrequently either wholly or in part a true fibrinous or "croupous" membrane. These two elements are often intermingled. The fibrinous form has been regarded and described by some as a separate affection from follicular tonsillitis. Though some cases apparently justify this discrimination, yet my observation, which has included a great number of cases, has led me to regard them as being, usually at least, simply different forms of the same affection. . . .

But, it may be asked, what ground of certainty is there that such a case is not in reality diphtheritic? I answer, this: that having recognized its true character by the methods now to be stated, we can accurately predict the subsequent course of events, which is that it will not extend beyond the tonsils, and that after two or three days the diphtheroid deposits will have vanished, leaving in their place the typical appearances of erosion or excavation in the tonsil, and that there will be none of the distinctive constitutional symptoms nor the sequelæ of diphtheria.

How shall the differential diagnosis be made? Not by the circumstance

EXPLANATION OF PLATE.

Fig. 1 shows a usual and easily recognizable form of follicular tonsillitis in a woman thirty years of age, on the third day of her illness. The characteristic location of the exudation and its evident relation to the lacunar orifices are here illustrated.

Fig. 2 depicts tonsillar diphtheria in a girl ten years of age, on the third day of her illness. She was one of seven members of one family in the Willard Parker Hospital for Contagious Diseases, who had been attacked nearly simultaneously, including the mother and five other children. In the mother and the four elder children, the affection was limited to the tonsils and was mild in character. A child of about three years of age had diphtheria of the tonsils, soft palate, and nares, from which she recovered. The youngest—an infant—was intubated for laryngeal diphtheria, and died on the following day with the symptoms of the extension of the membranous affection into the bronchial tubes.

Fig. 3 represents diphtheria of the soft palate and tonsils in a female patient twenty-six years of age, on the sixth day of the disease. The uvula, which in this case is small and unaffected, is nearly concealed from view by the swelling of the adjacent parts.

Fig. 4 (from Dr. Lenox Brown's work on Diseases of the Throat) is a rhinoscopic view of the posterior nares in a fatal case of naso-pharyngeal diphtheria.



Figure 2.



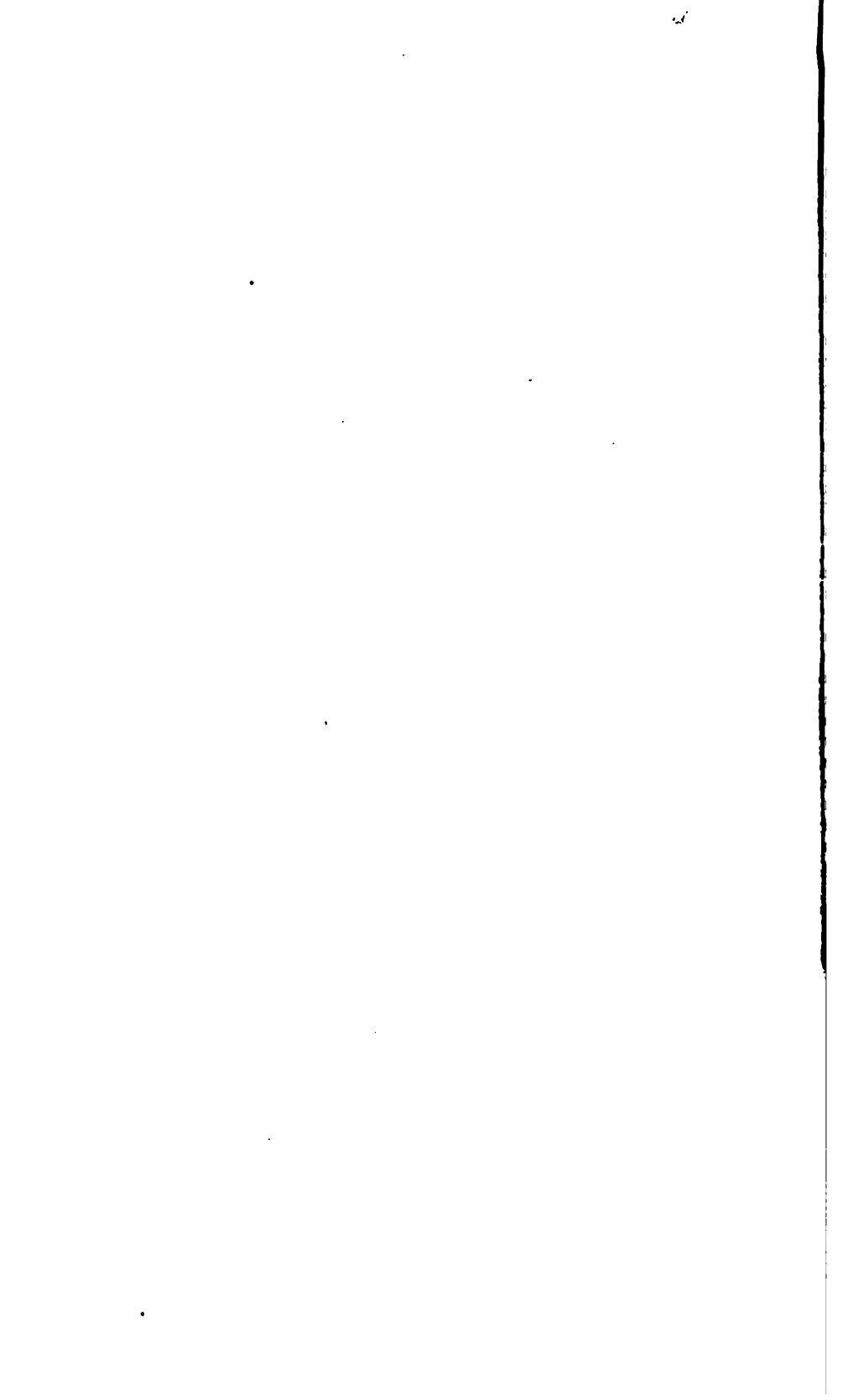
Figure 4.



Figure 1.



Figure 3



that the exudation is limited to the tonsil or tonsils, for that is often true in diphtheria; nor by its short duration, for that is equalled by very mild forms of diphtheria; nor by the severity or mildness of the accompanying febrile disturbance, for that varies greatly in both affections; nor by the test of infection or non-infection, for catarrhal tonsillitis is sometimes infectious; nor even by the presence or absence of albuminuria, for reasons which have been elsewhere stated.

We are told by various writers that the diagnosis of follicular tonsillitis may be made by scraping the membraniform investment from the tonsil, or forcing out the cheesy contents of the crypts by pressure, or thrusting a probe into the distended lacunal orifices, which methods in the case of a suffering and struggling child are unnecessarily heroic.

In the paper from which I have just quoted, I called attention to two points or methods in this diagnosis, of which experience has taught me the valuable practical utility, and the added experience of subsequent years has only tended to confirm my estimate of that utility.

The first of these points is the *location* of the membraniform patches in follicular tonsillitis. These patches, being usually formed wholly or in part by exudation from the lacunal openings, or being at least the result of an inflammation which involves the follicular portion of the tonsil, are in relation to those openings, and are consequently located on the more central portion of the convexity of the tonsil which is the site of the principal and most numerous openings (see Fig. 1).

On the other hand, a patch of true diphtheritic membrane, when it is limited to the tonsil, is not usually seen on that portion of its surface only, but occupies a more lateral or marginal position, the true diagnostic point being the relation, or want of relation, to the lacunæ of the tonsil. Hence if, on the first inspection of the throat, a membranous patch is seen covering the central portion of the convexity of one or both tonsils, and is limited to the tonsil, it may be regarded as very probable that the affection is follicular tonsillitis rather than diphtheria; while a membranous patch, however small and slight in appearance, which is seen on the marginal portion of the tonsillar surface, and is evidently not in relation to the lacunal orifices as its source, should be carefully investigated.

I have seen true diphtheritic membrane in its formative stage extending in slight streaks or spots across the tonsil. In those instances, it could easily be seen that the streaks or spots did not emerge from the lacunal openings, and bore no relation to them, which is, in reality, the essential point to be ascertained.

The second method is syringing the throat with warm salt water. In follicular tonsillitis, this will cleanse the throat of much deceptive material. The membraniform covering of the tonsils will be, in part at least, broken up and washed away, showing its friable and superficial character, and its relation to the distended lacunal orifices. A prompt and accurate diagnosis is thus made practicable by a simple and readily available method in many cases in which it would otherwise be difficult or impossible.

Like most other "ready methods" in diagnosis, those which I have now mentioned require to be used with due reserve and discretion, especially by inexperienced physicians and at times when diphtheria is epidemic. It cannot be denied that there are cases in which the most competent and experienced physician must reserve his positive diagnosis for a day or two, and rare instances in which some doubt must remain, even after the most care-

ful consideration of all the attendant circumstances. Yet the number of cases in which these tests, when applied *with accurate observation*, will fail, is surprisingly small. w.

2. Davis: Electricity in Gynecology.—(*Trans. Alabama Med. Assoc.*)

He believes that ultra-enthusiasm has led to frequent failure in the use of this remedy, but says there should be no question as to its importance as a therapeutic agent in gynecological practice when such men as Apostoli, the Keiths, Engelmann, and other competent observers who have had experience in its application, report most satisfactory results. His apparatus consists of a Gaiffe faradic battery; the bipolar uterine and vaginal excitator of Apostoli; a fifty-cell galvanic battery, the cells of which are of the Law telephone pattern; a portable Waite & Bartlett galvanic battery; Gaiffe's galvanometer; Massey's current controller; the abdominal electrodes of Apostoli and of Martin; platinum sounds, steel needles, and metal electrodes to be used with absorbent cotton.

He advises the use of the current of the Edison circuit, direct from the dynamo, when it can be had, thereby avoiding the annoyances and inconveniences of a battery. Portable batteries have proved very disappointing for the administration of high intensities, and his work has been confined principally to office practice. Great stress is laid on the importance of the application of the faradic current in subinvolution of the uterus, and every woman who has had an abortion or is confined at full term is placed on ergot; and should there be incomplete involution at the expiration of six weeks, he begins at once the use of the faradic current, with the bipolar intra-uterine excitator of Apostoli, and repeats the application every second or third day until the organ has returned to its normal size, "which can always be counted on with mathematical certainty." He does not recommend the use of the current immediately after every abortion or delivery, as practised by Apostoli, since this treatment could not or would not be afforded except by a very small class, unless it were certain that the uterus would not return to its proper size.

The currents of quantity and tension have been used with very satisfactory results as indicated by Apostoli, but he has begun to use the current of tension not only for pain, but to stimulate relaxed and enfeebled muscle fibre. The current of tension is borne better by the patient, and he has been unable to recognize the superior results of the current of quantity on muscle. In displacements of the uterus, he supports the organ with wool tampons, and does not object to any form of pessary, properly fitted, in connection with the treatment by electricity. He believes proper support of the organ, combined with the proper application of electricity, to be the most rational treatment for this condition.

When the uterus is enlarged, not from subinvolution but *hyperplasia*, the continuous current is indicated. All cases of chronic endometritis are amenable to galvanism—the positive current when there is much leucorrhœa or profuse menstruation, and the negative in other cases. From seventy-five to one hundred and fifty milliamperes are used twice weekly, for five minutes at a time. The sound is usually introduced through a bivalve speculum, and the handle allowed to rest on a large wad of absorbent cotton, which prevents injury to the endometrium. This is preferred because it permits of more thorough antiseptics, and allows the physician to rest his hand during the operation. He does not say that electricity will do away entirely with

such surgical procedures as shortening the round ligaments—Alexander's operation—or attaching the cornua of the organ to the abdominal wall, or the narrowing of the vagina by the many methods at present in vogue, but insists that many cases can be relieved by this method of treatment which would otherwise be condemned to the knife.

Chronic inflammatory exudations in the pelvis should be punctured once or twice a week, and from one hundred to one hundred and fifty milliamperes of the negative current used. The faradic current is an admirable remedy for the so-called chronic pelvic inflammations—thickening of one or both broad ligaments from the collection of blood in the distended veins when the uterus is displaced (Hardon). Of course the lacerated cervix which usually causes this condition should be repaired before the administration of electricity is begun.

The local application of the faradic current is capable of relieving many cases of amenorrhea due to atrophy of the uterus. In menorrhagia, due to relaxation of muscle, to engorgement, when patient menstruates from eight to nine days, after a few applications the menstrual periods would only last from four to five days. The positive galvanic current is the remedy indicated for hemorrhage due to disease of the endometrium, and is the current usually indicated for hemorrhage. Women often become pregnant soon after being treated by electricity, and it is unquestionably a valuable remedy for sterility due to nervous causes, so ably described by Dr. Campbell.

In neuralgic dysmenorrhea, and dysmenorrhea in women of a hysterical temperament—whom the slightest excitement or worry will cause to suffer greatly—in those cases where there is no apparent pathological lesion, he has succeeded, as with no other remedy, by the application of the current of tension or by the mild positive galvanic current. The negative current is indicated when the pain is due to mechanical causes in the cervical canal, and when there are inflammatory deposits around the ovaries, etc.

He reports a case in which he had removed the appendages when there were inflammatory deposits around them, and regretted that he had not used galvanism, as the operation had not benefited the patient. He does not think that galvanism can take the place of the removal of the ovaries and tubes, but says each has its special field, and should electricity fail, there is no harm done, and the operation can still be resorted to.

While he has had no experience with electricity in extra-uterine pregnancy, from a study of the actions of the agent and the results in the hands of others he thinks there can be no doubt but that it should be used in the early stages of this condition; and should there be a mistake in diagnosis there could be no harm done, as this is the remedy for the pathological processes which are liable to be mistaken for extra-uterine gestation. When the pregnancy has lasted for more than three months, and when it can be positively diagnosed, it is a question in his mind whether laparotomy should not be resorted to at once.

He said the subject which had concerned the profession most in connection with the use of electricity was *the treatment of fibroid tumors*, and that the results of the treatment in the hands of Apostoli, the Keiths, Engelmann, Laphorn Smith, and others, had demonstrated that this is *the treatment for fibroid tumors* which "offer probabilities of healthy retrograde metamorphosis" (Engelmann).

He had followed Apostoli's instructions in this class of neoplasms, and believed that the majority of cases could be *symptomatically* cured. Certainly, Apostoli's treatment should be tried before resorting to hysterectomy.

3. Frankel, Ernst: On Enucleation of Submucous or Intraparietal Myomata through the Abdominal Cavity (Martin's Operation) (*Arch. f. Gynäk.*, XXXIII., 8).—After reviewing the history and evolution of the operative treatment for these growths, the author narrates two cases of his own: The first was an unmarried woman of 28 years, who had for a long time been a sufferer from menorrhagia, while at the same time she noted an increase in the size of the abdomen. She had been confined to her bed for eleven weeks prior to coming under F.'s care, suffering from violent abdominal and spinal pains and vesical and rectal tenesmus. During the last three weeks a copious, excessively offensive discharge from the vagina had occurred. On admission, she was anemic and feeble, had no fever, and emitted an insufferable stench. The abdomen was uniformly enlarged by a somewhat movable hard tumor of smooth surface, of ovoidal shape, slightly tapering below. The vagina was very narrow and rigid, and completely occluded by an immovable, doughy, edematous tumor. It was not possible to introduce more than two fingers into the vagina, even under profound anesthesia. The bladder was very much compressed by the tumor, as was also the rectum. The diagnosis was made of a fibro-myoma, intramural and partially submucous, projecting wedged into the vagina. There could be no thought of removing the growth through the vagina, because of its size and its unbroken attachment to the uterine walls, as well as the decidedly narrow vagina. Martin's operation was therefore performed. The abdomen was opened and the uterus brought forward as in Cesarean section; the abdominal cavity was protected against the entrance of blood and detritus by applying sponges and cloths all about the uterus. A median incision was then made into the uterus without the previous application of an elastic ligature (which was rendered impracticable from the nature of the growth); the incision reached from the fundus to the lower third of the uterus. Copious hemorrhage followed. The incision was enlarged up to the free border of the tumor, and the enucleation of the latter and compression of the uterine wound by an assistant accomplished as rapidly as possible. After removal of the mass, it was seen that the wall of the uterus, particularly at the fundus and anterior portion, was extremely thin, and contained very few muscular fibres. Foul-smelling detritus flowed from the uterus at the first incision. The loss of blood was very great, and the patient came near dying on the table. The uterine cavity was scraped, irrigated with a five-per-cent solution of carbolic acid, and swabbed with a 1:1,000 sublimate solution. The redundant flaps of the capsule were removed with the scissors; the uterine cavity was dusted with iodoform, and a yard of fifty-per-cent iodoform gauze, folded into an elongated pad about three inches in width, was so placed that it completely filled the cavity and projected into the cervix. The cervix, like the uterus, rapidly contracted after removal of the growth. The bleeding was now moderate. Ten deep silken sutures were inserted into the uterus, the peritoneum being carefully brought together with juniper gut; then followed cleansing of the uterine surface with carbolized solution, the application of iodoform to the line of suture, reposition of the uterus, rapid cleansing of the peritoneal cavity, closure of the abdominal wound, and dressing. The operation lasted three-quarters of an hour. Union was com-

plicated by various disturbances, but still progressed so well that the patient left her bed on the seventeenth day, and was discharged five weeks after operation, in excellent condition excepting a small utero-abdominal fistula, which gradually closed. Menstruation recurred four and one-half months after the operation. The growth removed was a fibro-myoma, with predominating myomatous elements, and measured sixteen centimetres in its long and sixteen centimetres in its greatest transverse diameter.

The second patient was 40 years old, a nullipara, married thirteen years. She had suffered since her eighteenth year from copious and prolonged menstruation, which during the last seven years had amounted to severe menorrhagia; for four years she had noted the development of an abdominal tumor; she was greatly anemic, and had anemic murmurs at all the cardiac orifices and at the aorta, with edema of the lower extremities and the abdomen. The tumor was of about the size of a child's head, reaching two inches above the umbilicus, and was slightly movable. The diagnosis then made was that of an interstitial myoma of the uterus, the operative treatment of which was not as yet considered necessary. Injections of liquor ferri sesquichlorati and tincture of iodine reduced the bleeding considerably, and liquor ferri albuminati was given to overcome the hydremia and edema, with very good results. Nine months later she was again seen. She was in a miserable condition, disseminating a very foul odor, was very pale, had anasarca and edema of the abdomen, and high fever. She stated that, about fourteen days previously, a foul-smelling, copious sanguineo-purulent discharge had taken place, accompanied by labor-like pains; later, noticing that "a piece of meat" protruded from the vagina, she withdrew the object, and repeated the procedure on the reappearance of the pieces; hemorrhage, rigors, and great pain always followed. Upon examination, F. made the diagnosis of submucoid intraparietal myoma, which partially protruded and was wedged into the vagina, attached to the posterior wall and fundus of the uterus, and which was in a state of disintegration. Operation was then consented to and performed. Upon opening the abdomen, it was found impossible to bring the uterus up out of the cavity; the widely diffused lower segment of the growth was so tightly wedged in the small pelvis as to preclude access to either the cervix or the broad ligaments. The abdomen was transversely incised, and the intestines pushed upward, when it was possible to move the mass sufficiently forward to permit its being surrounded with sponges and cloths. A rubber ligature could not be applied. On incising the uterus in the middle line, a moderate quantity of bleeding took place, but a stream of foul fluid escaped, and it is not impossible that some of it gained access to the peritoneal cavity. The growth was removed with great caution in three or four sections; that in the small pelvis required great exertion. The toilet of the uterus and abdominal cavity was the same as in the preceding case, but the cut surface of the uterus was united to the abdominal wound by numerous silk sutures, in the endeavor to prevent infection of the abdominal cavity, and to obtain extraperitoneal adhesion of the uterus with the development of a utero-abdominal fistula, as in the first case. The fever continued after the operation, reaching 40° C., delirium set in, and the patient died on the second day with all the symptoms of acute septicemia.

The author then discusses at great length the considerations which guide to the diagnosis and operative treatment of myomata which have begun to disintegrate.

L. R.

4. Lomer: Weight of the Individual Organs of the New-born (*Zeitsch. f. Geburt. u. Gynäk.*, XVI., 1).—The bodies of 50 children, of which number 35 were still-born, the remainder surviving for short periods, were utilized in the observations of L.; only healthy children who perished during labor were examined; all doubtful cases were excluded. The causes of death in those who came into the world alive were trauma received during birth, general debility, and atrophy. The organs weighed were transferred from the bodies directly to the scales; the longitudinal measurements of the children were not determined, the author considering this an unreliable factor. The organs weighed were the heart, kidneys, thyroid and thymus glands, suprarenal capsules, spleen, liver, and lungs. The results are given in tabulated form, and show some remarkable variations and discrepancies in the weight of individual organs. Some of these variations may be ascribed to inherent predisposition of the parts; others, however, exceed the average so greatly as to excite suspicions of the existence of monstrosities, as, for instance, a child weighing 4,450 gm. had a heart of 24 gm.; child 4,150 gm., heart 40.9 gm.; child 2,250 gm., thymus 9.2 gm.; child 2,850 gm., thymus 28.5 gm., etc. Again, three children differing in weight by 1,000 gm. possessed hearts of practically equal weight.

The kidneys develop progressively with the fetus, and keep pace with the aggregate bodily weight; they functionate during intra-uterine life. Is their activity merely nominal, or is it as productive as in extra-uterine life? The author approaches this much-disputed question from an anatomical standpoint. Given an organ which has previously performed but a minimum amount of its physiological work, and which is suddenly called upon to elaborate the total urinary excretions, we would of necessity have to find some anatomical evidences of the stupendous revolution of functional activity which has occurred; the kidneys of children that have lived extra-uterine would appear hypertrophied in comparison with the languidly functioning organs of the still-born. Should no such differences appear, we would have proof that the kidneys of the fetus are in full functioning activity. L. failed to discover any difference in weight or in microscopical appearance.

The heart likewise undergoes a progressive increase in weight synchronous with the development of the fetus, but does not keep pace with the aggregate increase. It does not appear to hypertrophy with the onset of extra-uterine existence.

The growth of the lungs is progressive with the fetal development in the earlier months, but diminishes as gestation approaches termination. The lungs of children that have breathed are heavier than the lungs of still-born.

The thyroid gland grows with the body, but somewhat slower, and shrinks after birth. The size of the gland is independent of that of any other organ, and may be relatively large or small.

The thymus grows more rapidly than the body in intra-uterine life, but decreases rapidly after birth.

The suprarenal capsules keep up to the general growth, but likewise suffer great diminution after birth.

The liver, while maintaining equable relationship during fetal existence and for some time during extra-uterine life, later on slightly decreases.

The spleen of still-born children shows decided variations, as from $\frac{1}{10}$ to $\frac{1}{15}$ of the weight of the body. The increase in the spleen and liver is of practical importance, syphilitic diseases causing both of them to enlarge; in a number of L.'s cases, however, such infection could be excluded.

The author offers the following rules: (1) The thymus gland grows comparatively more and with greater rapidity in intra-uterine life: its increase exceeds the increase of the body; (2) the kidneys, suprarenal capsules, and liver keep pace in their growth with the increase in the bodily weight; (3) the heart, the thyroid gland, and particularly the lungs, lag somewhat in the general increase; (4) the spleen is so frequently the subject of such great variations that no rules can be applied to it; (5) the heart and kidneys do not appear to undergo any change in weight at birth; (6) the thyroid and thymus glands and suprarenal capsules, on the contrary, diminish in weight post partum, particularly the two last; this loss only becomes apparent from the second to the fifth day, and is not compensated by appropriate increase in other viscera; the liver also appears to lose in weight in obedience to the change in circulatory relations after birth; (7) the lungs become heavier with the beginning of their functional activity; (8) as the kidneys do not hypertrophy immediately after birth, it is possible that they are in full activity in fetal life; and (9) as the liver and spleen present great individual variations in bulk, care should be taken not to confound them with the enlarged organs which accompany syphilitic infection.

L. R.

5. Runge, G.: *The Russian Female Pelvis in its Anthropological Aspect* (*Zeitsch. f. Geburt. u. Gynäk.*, XVI., 1).—This is a painstaking effort to elucidate the differences which exist in the pelves of the adult woman and the new-born female, in its bearings on anthropological studies, and presents the labors of the author in detail, together with the researches of his contemporaries.

L. R.

6. Leopold, C. G.: *Ventral Fixation of the Retroflexed Uterus* (*Sammlung klinischer Vorträge*, No. 338).—Nine cases coming under the personal care of L. are described, with their clinical histories and the technique of the operations performed. The indication for surgical interference in three cases was pure retroflexion, the uterus being in a state of chronic inflammatory swelling and sensitiveness; in one, the retroflexion was caused by a subserous myoma of the fundus, and in five the ovaries and tubes were bi- or unilaterally inflamed and matted to the uterus. All cases were followed by uniformly good results. L. does not decry non-surgical treatment for this affection; on the contrary, it is good practice to make use of the various local and systemic methods, particularly the patient and judicious use of pessaries and the more lately introduced massage, which every practitioner resorts to, often with good success. Those possessing the time and means, and whose surroundings and mode of life will insure a painstaking course of treatment, will undoubtedly be able to defer the operation. But among the less fortunate, those in whom daily tasks, manifold cares, and lack of means interfere with their proper regimen will find a boon in this operation, which cures in a short time, and cures permanently.

L.'s cases show that the following may be taken as indications for the performance of the operation: (1) First of all, in performing oöphorectomy or salpingotomy for the relief of chronic oöphoritis or salpingitis, whether the retroflexed uterus is bound down by adhesions or not; (2) in the removal of growths which have induced permanent retroflexion (subserous myomata of the uterus, tumors of the ovaries), and (3) in pure retroflexion of the mobile and non-adherent uterus, when the patient's condition is to be attributed solely to this, and when all other methods for giving relief have had a

thorough trial. In the first class of cases, we have to do mainly with infectious endometritis, salpingitis, oöphoritis, and perimetritis of gonorrhæal or puerperal origin; here the removal of both ovaries is imperatively called for, even though the uterine adnexa of one side are as yet in a state of commencing inflammatory swelling and perimetritic adhesions. In the second and third classes, the ovaries and tubes will generally be found healthy. Here we should be guided by conservatism. The technique of the operation must be simple to inspire confidence; the most important preliminary is the removal of the adhesions, which, though generally sparse and thin, are now and then very numerous and hard. The finer ones may be separated by gentle manipulation with the index finger; very little bleeding follows; should hemorrhage take place and persist, a pad of iodoform gauze may be used as a compress and left in place until the completion of the operation. The adhesions are separated with great difficulty when tough and numerous, as they may implicate the rectum, the ureters, and the bladder. The hand of the operator should remain close to the fundus; the uterus should be caught between the index and middle fingers of the left hand, while an assistant pushes forwards and upwards the anterior wall of the rectum and the vagina; the fingers then press downwards along the uterus and gradually separate the strands; the harder and thicker ones will have to be separated by the handle of the knife, the scissors, or the knife itself; hemorrhage is generally slight. The fixation is accomplished by the insertion of three deeply ramifying abdominal sutures, which include the body of the uterus and draw it close to the inner border of the peritoneal wound. The first penetrates from $\frac{1}{4}$ to 1 cm. from the tubal orifice; the second, between it and the third, $\frac{1}{4}$ to 1 cm. from it, transversely through the upper muscular layer at a depth of 2 to 3 mm., and draws, after the lower angle of the wound is closed, the body toward the abdominal wall. Care should be taken to prevent prolapse of intestines or mesentery above or below. The upper angle of the wound is then closed. The three fixation sutures must be made long to facilitate withdrawal, which may be done in from fourteen to eighteen days, the abdominal sutures as early as the eighth or twelfth day. By this time, the body of the uterus is firmly united to the abdominal wall. The patient must be kept in bed for three weeks, and should refrain from any exertion for at least three months, and see that bladder and rectum are regularly emptied. To facilitate adhesions, L. had formerly lightly scraped the serous covering of the uterus with a knife. It was not done in these cases. The author concludes with the declaration that this operation leaves us still far removed from the ideal.

L. R.

7. **Temesváry, R., and Backer, J.:** *Studies in the Lying-in State* (*Arch. f. Gyn.*, XXXIII., 8).—An elaborate series of observations, pertaining to (1) Relations of Temperature; (2) Relations of the Pulse; (3) The Involution of the Uterus; (4) The Lactæal Secretion; (5) The Healthy Puerperium. In many instances the authors' results agree with those of other observers; in others, decided diversions are apparent. The figures and deductions are in general practical, if only to re-emphasize previously known facts which are frequently overlooked.

L. R.

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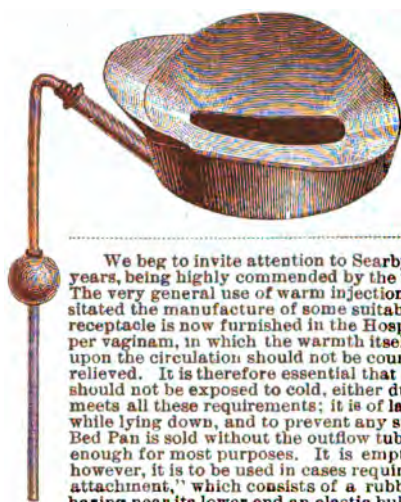
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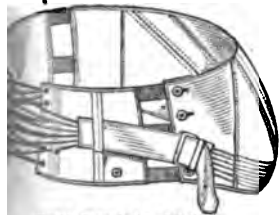
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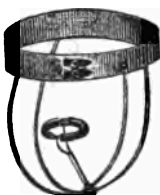
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DISEASES OF WOMEN AND CHILDREN.

VOL. XXII. SEPTEMBER, 1889. No. 9.

ORIGINAL COMMUNICATIONS.

STUDIES OF THE LEVATOR ANI MUSCLE.¹

BY

ROBERT L. DICKINSON, M.D.,

Lecturer on Obstetrics and Assistant Obstetrician to the Long Island College Hospital.

(With nineteen woodcuts.)

I VENTURE to affirm that there is no considerable muscle in the body whose form and functions are more difficult to understand than those of the levator ani, and about which such nebulous impressions prevail. The drawings of it are complicated, the impressions of its strength and importance are conflicting, and the knowledge concerning it is fragmentary and not readily accessible. For these reasons a study of it, with new drawings, tests, and cases, seems worth while.

One commonly meets with the idea that the levator is a kind of muscular funnel tapering to the anus and serving to pull it directly upward after defecation. This is absolutely untrue. The muscle rather resembles a horseshoe—a sling attached to the pubes in front, its sweep reaching horizontally backward to circle like a collar the rectum and vagina. Its action in

¹ Part of the Prize Essay, for 1887, of the Association of the Alumni of Long Island College Hospital.

woman is to drag the lower ends of the vagina and rectum forward level to the symphysis.

I quote from Luschka the following description: "The levator ani might be called the diaphragm of the pelvis." In many or most women "it is so thin as to be nearly membranous. Its flat bundles are loosely bound together, and even open up here and there into fissures filled with connective tissue and fat." This peculiarity of structure serves a good purpose under the extreme distention of delivery.

Since the sides of the true pelvis in woman are of lesser

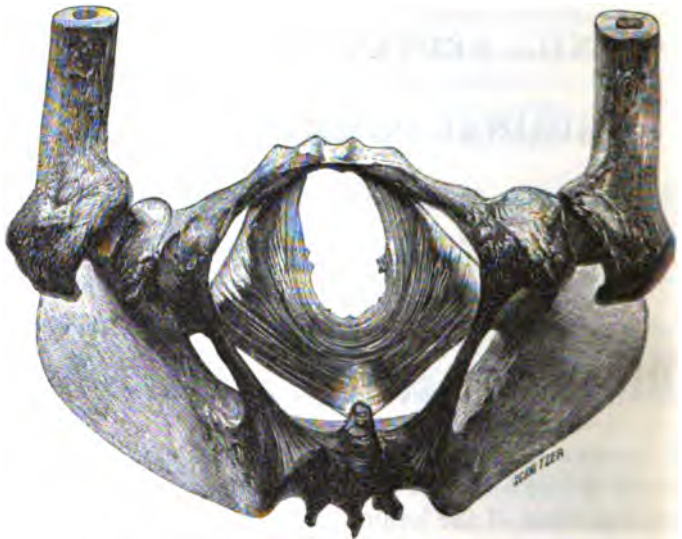


FIG. 1.—The levator ani: appearance when the pelvic outlet is looked at squarely. The cut ends projecting inward are those fibres which run into the recto-vaginal septum.

height than in man, her pelvis being shallower, so the perpendicular height of her levator is less, while her horizontal measurements are greater. The muscle lifts less than in man.

Origin.—"The origin of the levator is partly from the bones and partly from the fascia of the true pelvis. The bony origin is principally from the horizontal ramus of the pubes. In front, the halves do not meet; each starts half an inch (1.25 cm.) from the centre of the symphysis. The insertion is of the width of two fingers, located one and one-quarter inches (3.5 cm.) below the upper border of the ramus." (The belly of fibres which starts here sweeps backward nearly horizontally about the

rectum. In some women, it is doubly as thick as the rest of the levator, and has edges or margins thicker than the centre of the

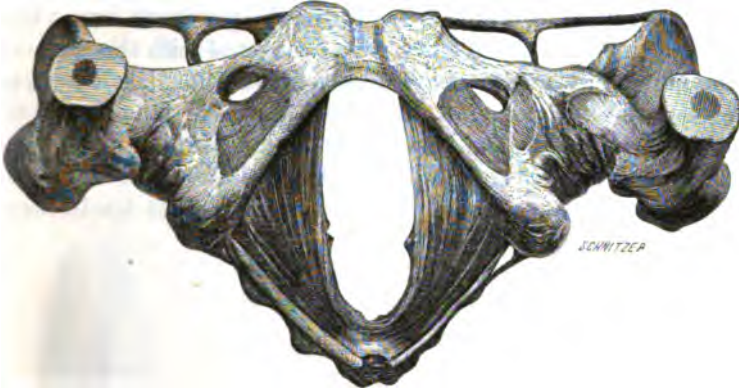


FIG. 2.—The levator as seen with the patient in the dorsal position.

ribbon. It is this portion that is especially liable to become hypertrophied and give rise to severe vaginismus, dyspareunia,

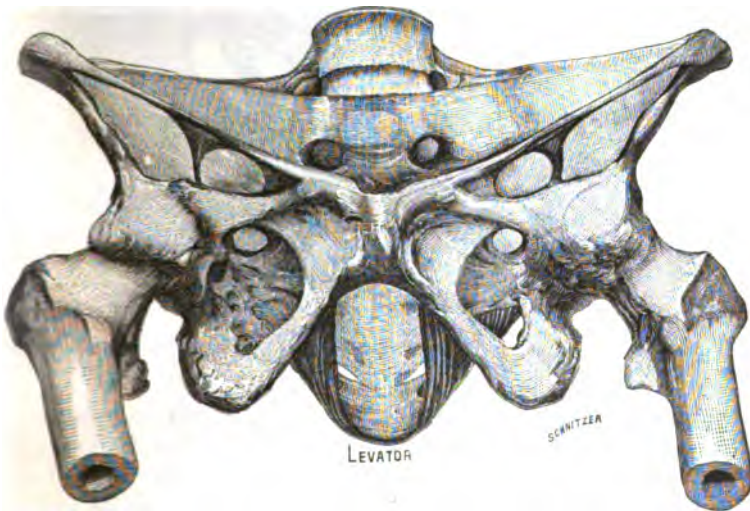


FIG. 3.—The levator. with the patient in the semi-recumbent position. Observe the slope at the side.

and dystocia.) “The smaller part, a quarter of an inch wide, arises from the inner side of the ischial spine, and lies imme-

diately in front of the origin of the coccygeus. Between these two points the origin is from fascia, and generally from a curved line of a fine crescentic shape, of which the lowest point is situated two inches ($5\frac{1}{2}$ cm.) beneath the ilio-pectineal line. This curved line of origin is intimately connected with the tissue of the pelvic fascia, so that the muscular fibres begin as tendinous bands, which ray out into the fascia and give much strength. Both on the upper and lower surface of the levator this fibrous tissue flattens and spreads out. An absolute connection, however, between the muscle and the so-called arcus tendineus of

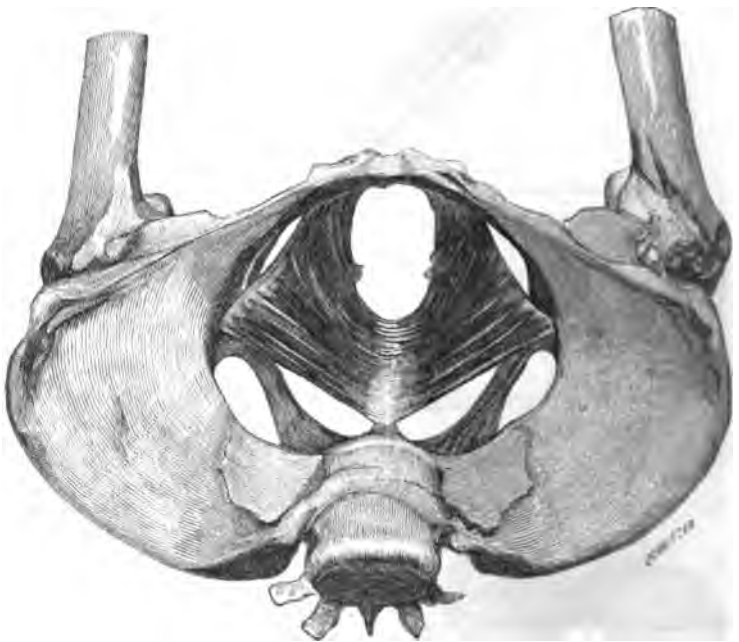


FIG. 4.—The levator, looking squarely into the brim. The tendinous arch which spans the obturator muscle is here shown.

the pelvic fascia ['white line'] is by no means constant. A band-like thickening of the fascia, or a ledge-like fold projecting into the cavity of the pelvis, is not the usual form of this attachment. This arch sometimes lies over the upper surface, and can be separated from it without injury to the fibres."

Course.—"The course of the muscle is as follows : Stretching downward and backward, its fleshy bundles divide into two very unequal parts, of which one travels to the front of the

rectum, the other to its lateral and posterior aspects. The fibres which take their origin from the pubic bone course down alongside (neben) the vagina, and are united to it by strong connective-tissue attachments, but nowhere on its walls do they terminate." Henle says that the longitudinal muscular fibres of the vagina on its lateral aspects are inserted into the levator

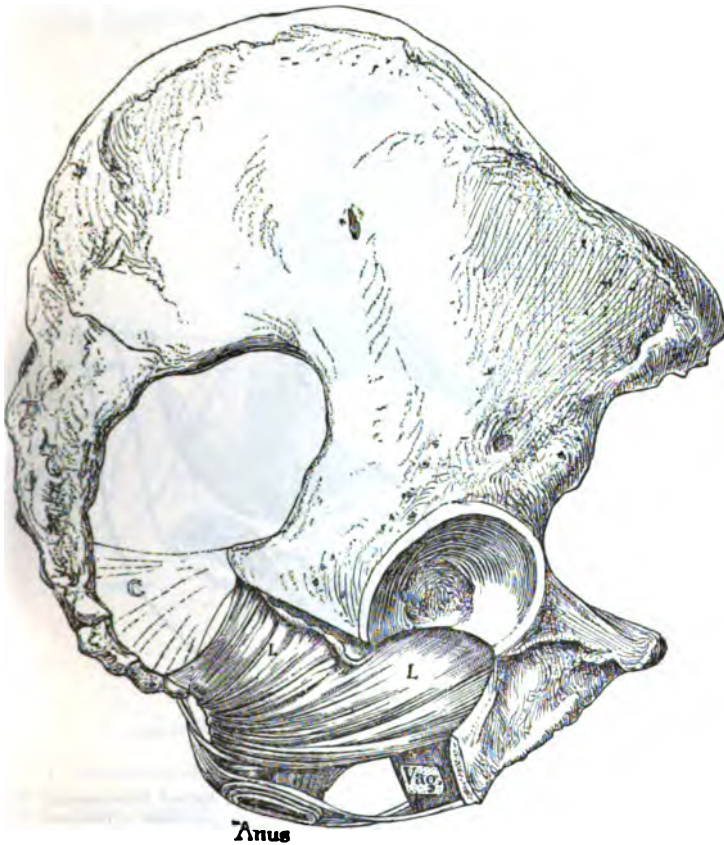


FIG. 5.—The levator, seen from the side when the ischium is removed. The lower bundles are the strong and heavy ones. The sphincter ani is shown surrounding the anus, and the coccygeus (C) is faintly indicated. (Redrawn from Luschka.)

by interweaving with its bundles, just as we find to be the case about the rectum. These relations between the lateral walls of the vagina and the edges of the levator are worthy of note.

“That part of the levator which descends to the anterior aspect of the rectum is a flat bundle only a few lines wide, bow-

shaped, convex below, its lowest point about half an inch (1.5 cm.) above the anal opening. This bundle comes from the outer side of the pubic origin and crosses over the larger belly to arrive at its destination. In women, this portion of the levator is *reduced to a minimum* and collected together in the recto-vaginal septum." See photographs, Figs. 1 to 4. Palpa-

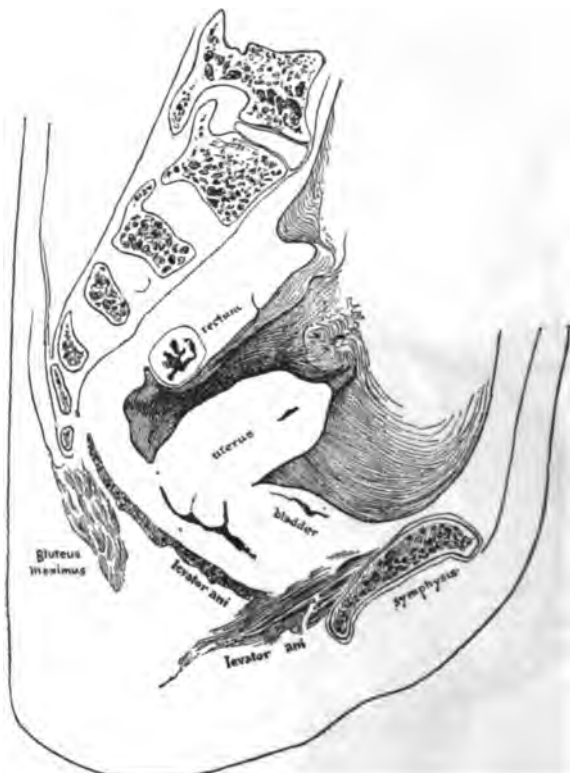


FIG. 6.—The levator as seen in sagittal section one inch distant from mesial line—showing how it upholds the uterus and the slope of the pelvic floor. (Redrawn from Hart.)

tion by recto-vaginal touch confirms the last statement, although an occasional exception is met with.

"That section of the muscle which reaches back of the rectum is divided into three parts. The posterior, smallest portion is fastened by a tendon to the front of the fourth coccygeal vertebra. The middle portion becomes aponeurotic and joins with its fellow in the point of the coccyx. This is about 1 cm. long

and the same in width. The anterior and largest bundle unites with the opposite bundle behind the rectum, with no tendon intermediate. The strips nearer the coccyx are flatter and thinner, and divide up in that portion of the pelvic floor which slants downward from the coccyx to the rectum. They hug the concavity of the end-curve of the rectum and support it from below. The lower-lying bundles are stronger and more crowded together. They form a sling-like fillet, half a centi-

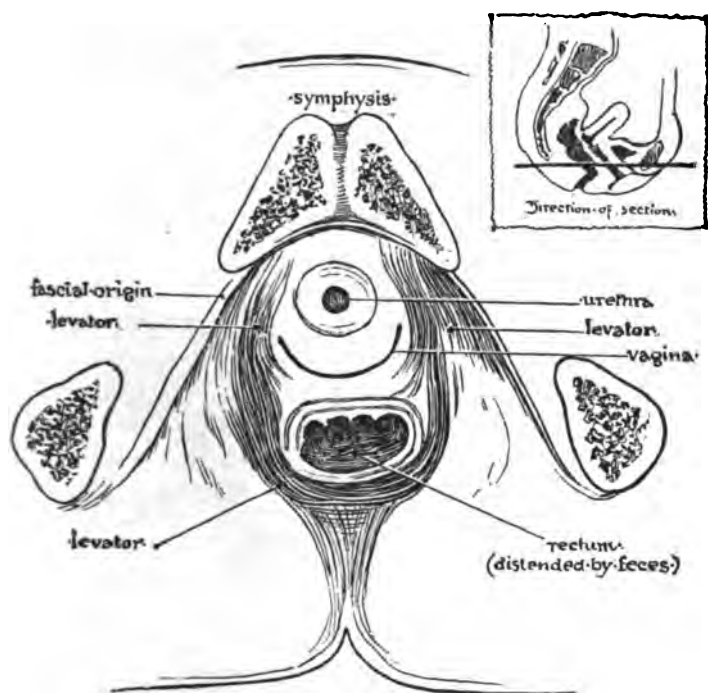


FIG. 7.—The levator as seen in a section which takes the direction of its lower fibres.

metre wide, coursing about the end of the rectum. This band is intimately connected with the sphincter ani, and forms that portion acting particularly on the rectum. Some one of the constituents of this group crosses usually with one of those bundles of the sphincter ani which are inserted into the dorsal surface of the coccyx (see Fig. 5), while a set of fibres from the sphincter is continuous with the sling-like division of the levator ani." The union between the levator and the rectal walls is very close, although none of the fibres of the muscle terminate

in the walls. The same close interweaving with the longitudinal muscular fibres is found that was noticed in connection with the vagina. (Henle.)

It is curious to observe how grossly misrepresented this muscle has been. Gray, Savage, Weisse, Lusk, and others depict the fibres running plump into the sides of the vagina and rectum. And even Hart's fine atlas (Plate XIX.) shows the anus opening on the tip of the coccyx and stealing space from the levator. I would draw attention to Figures 7, 8, 9, and 10. Fig. 6 shows the levator cut partly across and partly parallel to its course. How it acts as a sling to the uterus and

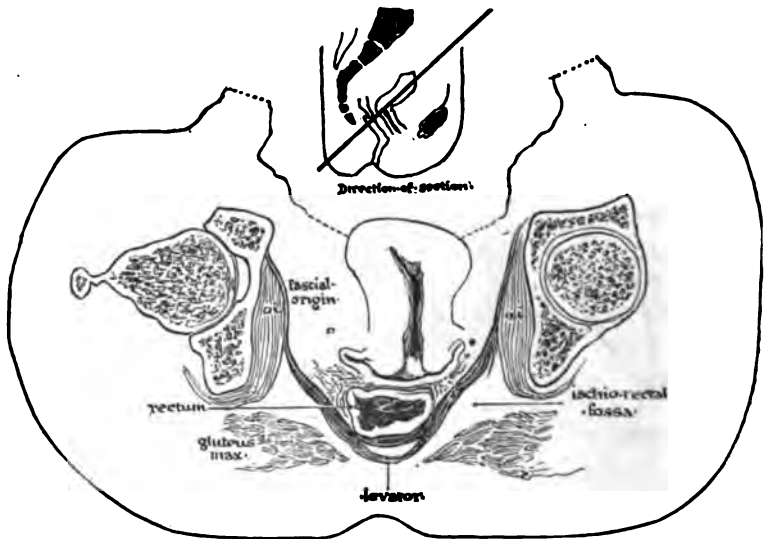


FIG. 8.—The levator shown in a section taking the direction of its upper fibres. Its contribution to the support of the uterus is appreciated. (Redrawn from Hart.)

bladder is here well demonstrated. Fig. 8 is a section cut transversely in the axis of the uterus. The saw follows the direction of the posterior fibres of our muscle, which from this different point of view is again asserted to be a sling for the uterus and posterior vaginal wall. You will note that the axis of pressure from above will be nearly in a direction which will drive the uterus down into the hollow of the muscle.

Fig. 7 is a section which follows the direction of the lower or horizontal belly. It clearly proves that if the fibres shown contract, the rectum and vagina will be dragged forward

against the posterior surface of the symphysis. Also, that this is the strongest part of the muscle, being here, as other frozen sections and dissections show, a quarter of an inch or more in thickness (6-8 mm.).

The nomenclature of Savage requires mention. It seems to me to confuse the subject by its subdivisions. He labelled the lower fibres, which have bony attachment in front only, the pubo-coccygeus (they do not touch the coccyx). The bundles originating from the tendinous arch which spans the obturator foramen he named the obturato-coccygeus, and the portion having its origin from the ischial spine the ischio-coccygeus.

Coccygeus.—This muscle arises from the ischial spine and spreads its fibres like a fan from the tip of the coccyx up the side of the lower two sacral vertebræ, filling the space left open behind the levator. (See Fig. 5.)

Bulbo-Cavernosus.—As the coccygeus completes the muscular diaphragm behind the levator, so a thin, weak muscle helps to close the opening between the shanks of the horse-shoe—the bulbo-cavernosus, sometimes misnamed the sphincter vaginæ or constrictor cunni. Each muscle starts posteriorly from the perineal fascia at a point nearly midway between the sphincter ani and the ischia, while a small bundle only is connected with the sphincter itself (Luschka). In front, the convergent ends separate into three portions: one passes to the under surface of the corpus cavernosum of the clitoris, a second goes to the posterior surface of the bulb, and a third blends with the mucous membrane between the clitoris and the urethral orifice (Henle). The action of this muscle consists chiefly in compressing the veins of the clitoris, and in thus enhancing the turgidity of the erectile apparatus. It is in no sense a sphincter muscle, though by pressing the turgid bulbs inward it may narrow the vestibule of the vagina (Lusk). I believe it cannot be found by the touch unless greatly hypertrophied.

Fascia.—No muscle, however strong, could withstand prolonged strain, unless it was supported by fascial "sheets" or interlaced with fibrous tissue.

Looking at the pelvic outlet of the cadaver in the lithotomy position, we find that it is lozenge-shaped, made up of triangles; the apex of the anterior one being at the symphysis, while the apex of the other is at the sacro-coccygeal joint. In the ante-

rior triangle we find the vaginal and urethral openings; in the posterior, the anus. The common base line is a line drawn just in front of the tuberosities. The deep transverse perineal muscles cross nearly in front of this line. At its centre lies the "tendinous centre" of the perineum. The anterior triangle holds between the rami on either side five layers of fascia.

The *levator fascia* is formed in this way (Fig. 9): The iliac fascia splits into three parts. One layer covers the inner surface of the obturator internus; a second very dense fascial

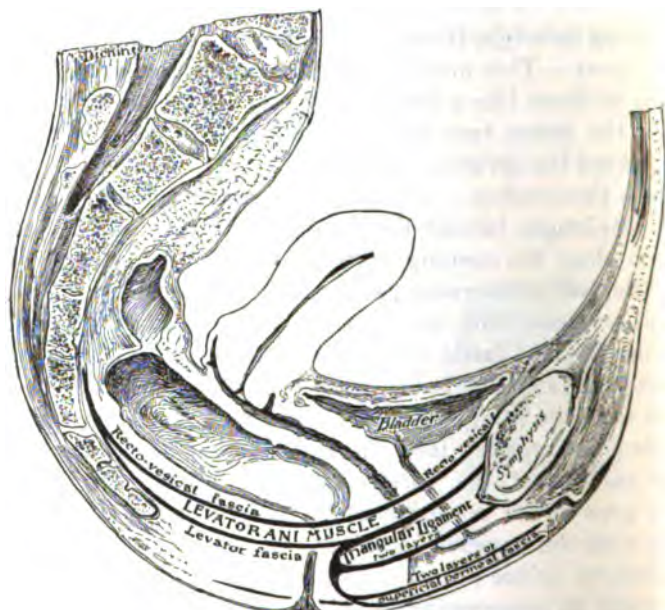


FIG. 9.—Diagram of the fascia of the pelvic floor in mesial section, to show how the levator is backed by "strong and dense" sheets of fibrous tissue. Five layers: 1, superficial perineal fascia, outer layer; 2, superficial perineal fascia, inner layer; 3, triangular ligament, outer layer; 4, triangular ligament, inner layer; 5, recto-vesical fascia.

sheet lines the levator ani on its under surface, and is known as the *levator fascia*; the third division covers the levator on its inner or upper surface, and is the recto-vesical fascia. Ranney's diagram is the clearest exposition of this of which I am aware. It is purely diagrammatic as far as the vagina goes.

THE LEVATOR ANI MUSCLE IN ACTION.

We have seen that the thickest portion of the levator ani was that which formed its lower edge. The ends are fast to the

back of the pubes ; the sweep of it incloses rectum and vagina ; its direction is nearly horizontal. This strip, two fingers wide, is not unlike two fingers to the touch where it passes the side wall of the vagina in its backward course. That is to say, the edges of this thick ribbon seem rounded and more prominent than its centre. This is moderately well shown in Figs. 4 and 5. By asking the patient to draw up strongly, it can be

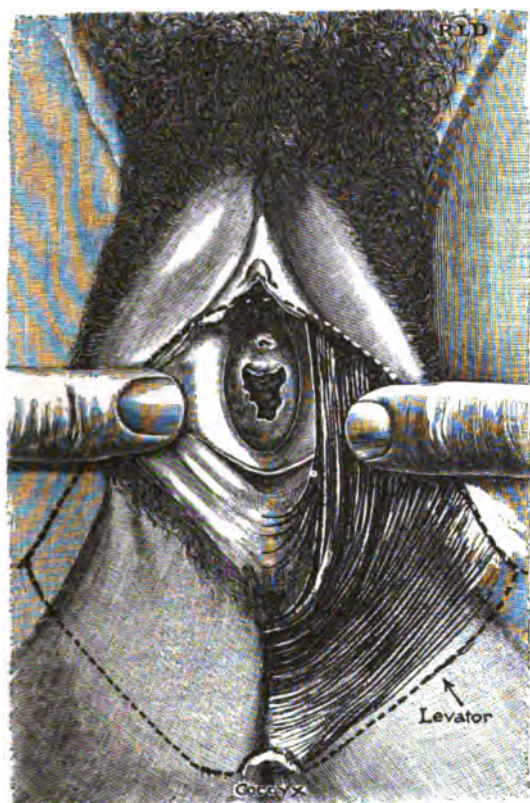
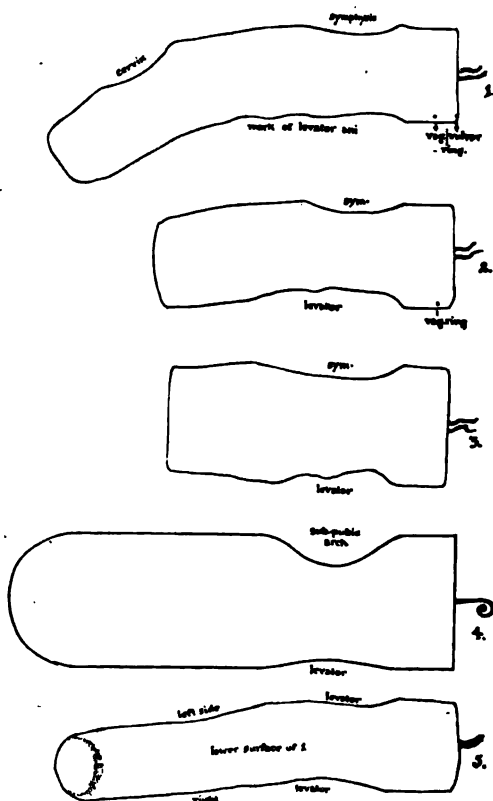


FIG. 10.—The levator, seen through the skin. The outlet of the pelvis is dotted, and the course of the main muscular bundles indicated.

readily felt, even after labor. In some cases this portion is greatly hypertrophied, forming a veritable constricting ring a short distance from the hymen. Contraction of this ring draws the anus and the posterior wall of the vagina toward the symphysis. It is capable of so firmly closing the lower end of the vagina that coitus and digital examination are impossible. In

exaggerated cases, spasm beginning during the orgasm has held the male organ so firmly as to prevent its withdrawal for some time—in some instances until chloroform has relaxed it. Hildebrandt, Budin, Hendrichsen, Davis, and others have recorded such conditions. The bibliography contains the references.

I was led by an experiment of Budin's to see whether that contraction, which is so readily appreciated by the finger, could



FIGS. 11, 12, 13, 14, 15.—Impressions on the wax phallus made by the levator when the muscle contracts ($\frac{1}{2}$ size). The marks of the cervix and symphysis are shown, as well as the bending produced, and the different impression made on a small or large mould (Fig. 14 is from Budin.)

not be graphically shown. A cylinder of modelling wax, softened by warmth and kneading, with a cord solidly fastened into it, is greased and slipped into the relaxed vagina of a patient in the dorsal decubitus. She is asked to contract firmly. An impression of the muscle is printed in the wax. While

this worked well for strong levators, I was obliged to devise a more sensitive mould for weaker muscles. On a brass cylinder I carefully moulded an evenly laid outer wax cylinder. Together they are introduced into the vagina. The metal tube is withdrawn, and we have a wax Ferguson's speculum *in situ*. Looking down into this, we can watch the process of indentation. After relaxation and gentle withdrawal, the cylinder is at once hardened in cold water and traced.

The results are fairly constant.

1. The distance from the vaginal orifice (hymen) to the inner edge of the levator averages somewhat less than half an inch (1.2 cm.).

2. The double band is always sharply defined.

3. The larger the cylinder, and consequently the more the levator is stretched, the closer together the strong edges of the horizontal belly are found.

4. The upper end of the phallus is crowded hard against the cervix.

5. Contraction causes the axis to change fifteen to twenty degrees, *i.e.*, the vaginal outlet is quiescent; the upper end rises toward the brim 15° to 20° .

I have selected the case from which these tracings are taken as a type. (See Figs. 11-15.) No. 1 was straight when introduced, and met no resistance, but the contraction of the muscle has curved it by pressing it hard against the subpubic arch and the cervix uteri. This bears out the assertion that the anterior concavity of the vaginal slit, as seen in mesial sagittal section, is due to the levator. It confirms Sims' prediction concerning a vaginal constrictor that presses the glans penis firmly against the os tincæ. This levator is of unusual strength.

The fifth outline is traced from the lower surface of the first. The levator is of unequal power on the two sides—a not uncommon occurrence. The left side has a deep indentation near the vaginal outlet, but the force brought to bear from the right a little further up the canal has curved the whole cylinder.

The fourth outline is Budin's, from one of the cases I quote later. It differs from almost all of mine in that his levator groove is shallow (though the phallus is large) and in that the subpubic groove is deep. His outline is handsome—too regu-

lar, I fear, to be accepted as accurate, since my less architectural results are quite constant.

The assertion that the most characteristic action of the levator is to draw the anus and perineal body forward toward the symphysis cannot be more forcibly illustrated than by putting together two tracings of the pelvic floor (Fig. 16). These tracings have been fitted to a pelvis in section. The upper one belongs to the following case :

CASE I.—Mrs. M., 26, rather corpulent. First child two years ago ; precipitate labor. Torn to mucous membrane of rectum

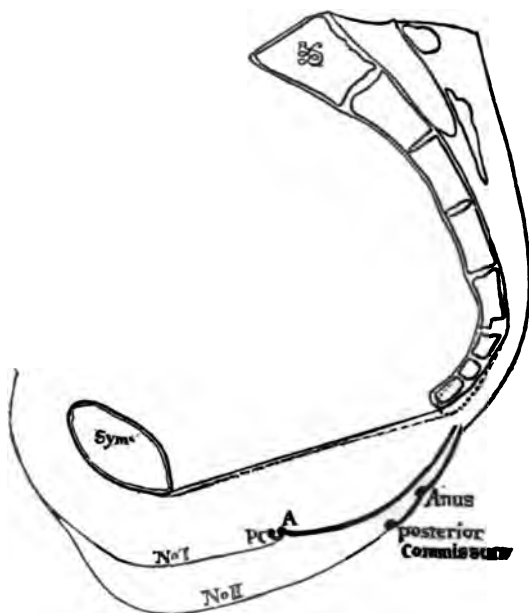


FIG. 16.—Tracings from the pelvic floor with strong and weak levators. The upper tracing (No. 1) shows how a vigorous muscle will pull the anus A toward the symphysis and so compensate for the total loss of the perineal body. The lower tracing is from a patient with a good perineal body and pelvic floor, excepting that the levator has been torn and allows the anus and posterior commissure to drop backward, prolapsus resulting.

(Fig. 17). Only a few fibres of sphincter left ; slight cystocele ; no rectocele. Pelvic floor projection a little less than an inch. Anal groove unusually deep. Puckers about anus an inch in length posteriorly. Levator thick and strong. Horizontal belly hypertrophied and in a state of *tonic contraction*.

Notice on the tracing the length of the ano-coccygeal portion. It is as long as Schultze's and Foster's maximum. Observe also how scant the room between posterior commissure and

subpubic ligament is. The normal distance is $1\frac{1}{2}$ inches. This is a little less, though an inch of perineal base is gone. The compensation is perfect.

CASE II.—Mrs. I., 53. Menstruating regularly, in fair health, active, and by no means flabby; mother of six children. First labor was “terrible,” with forceps. Feeling of entire loss of



FIG. 17.—Severe perineal laceration of long standing, where the levator gives perfect compensation by drawing the anus forward. Deep sulcus and no rectocele. (Skene.)

power here ever since. Prolapsus uteri and cystocele, half of uterus out at times. Perineal base five-eighths of an inch, three-quarters of an inch thick. No rectocele, for the perineal “wedge” perfectly supports the anterior rectal wall. A little way up vagina, on left side of rectum, a sulcus, floored with a scar and deep enough to bed the finger in, runs up to the ischial spine. Levator powerless.

See how the posterior commissure in the lower tracing has fallen three inches away from the pubes. The presence or absence of prolapse in these cases depends entirely on the condition of the levator. Injury to the muscle will not account for all prolapse. But it does account for most "sagging." Such states are classified in my paper in the July number ("The Vagina as a Hernial Canal") as due to dropping backward of the opening in the outer layer of the pelvic floor until it coincides with the opening in the inner layer, and so permits a hernia.



FIG. 18.—Sagging of the pelvic floor with rectocele when the levator has been injured. (Skene.)

In some patients, the whole muscle is more equally hypertrophied, and the posterior or upper fibres lift the posterior vaginal wall at right angles to its axis. Then the ring-like constriction during contraction is replaced by the sensation of a broad, tense band.

The Strength of the Levator Ani.—In order to obtain a somewhat definite conception of the strength of this muscle, the following rough test was tried. Traction backward was made on the levator, and the amount of resistance which the patient could exert was measured by a dynamometer. This

instrument was made for me by Tiemann and tested pound by pound during the process of graduation of the scale; for I had found that all the ordinary oval hand dynamometers of elliptical shape, including those made by Collin, of Paris, were entirely untrustworthy, not pretending to represent their "face value" when put to the test. With the patient in Sims' position, a very small and short-bladed Sims speculum is hooked along the posterior vaginal wall in such a way as not to touch the coccyx nor approach it. The dynamometer is attached and traction made in a line running from the symphysis through the pelvic floor just above the anus. At first, the pull is just sufficient to bring the blade steadily and firmly against the posterior vaginal wall. The scale will then show one to two pounds' tension while the pelvic floor muscles are thoroughly relaxed. Now we request our patient to contract and resist the pull. After subtracting the first reading, this second figure indicates the number of pounds' traction this individual levator can make. The average is ten pounds, running up in certain cases to twenty-seven pounds.

To afford a comparison, I might add that the hooked forefinger can pull about twenty pounds. A nurse holding a Sims speculum is unable to stand such traction long.

The classes of patients in whom I have so far noted a particularly large size and vigorous action of the levator are :

1. Muscular women, *e.g.*, young domestics.
2. Erotic women.
3. Women with wide pelves.
4. Patients suffering from painful lesions about vulva and anus, such as fissures.

The levator ani becomes hypertrophied during pregnancy.

The argument that the thinness of the muscle is proof that it cannot resist the advancing head with any considerable degree of force is fallacious. The levator measures from $\frac{1}{8}$ to $\frac{3}{8}$ of an inch in thickness (.3 to 1 cm.) (Luschka, Hart's sections, dissections). The uterine walls at term "measure not more than $\frac{1}{8}$ cm. in thickness," says Schroeder. This is $\frac{3}{16}$ of an inch, while the diaphragm is not over $\frac{3}{16}$ inch. The levator weighs one-fourth as much as the diaphragm, and half as much as the external oblique. Comparisons of relative transverse sections are even more favorable to the levator. The strain that the diaphragm and abdominal muscles tolerate is exerted at

right angles to the muscular fibres. The diaphragm is interwoven with strong fibrous tissue, but the levator is backed by "dense and strong" fascia on its under surface. If the diaphragm stands the strain, the levator may suffer part of it without injury.

Having thus met Joulin's statement regarding the structural

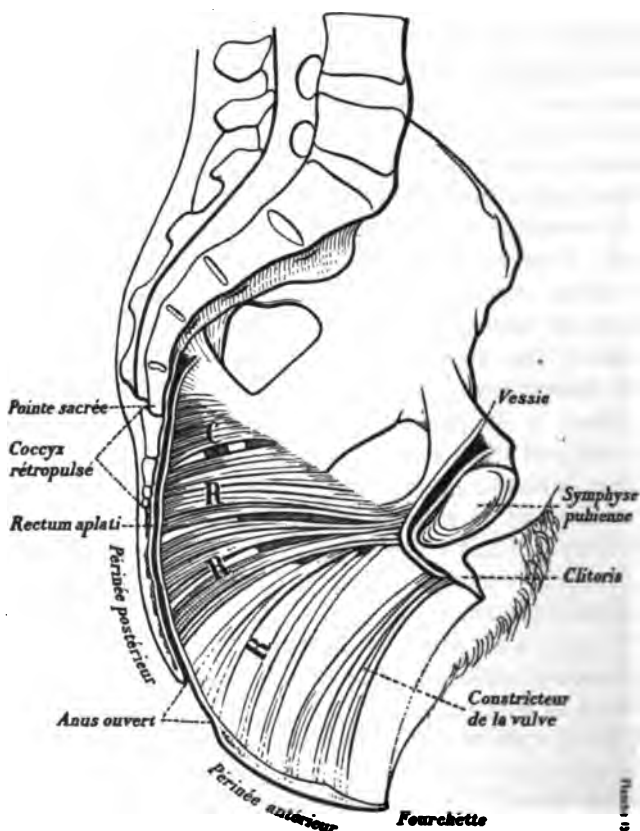


FIG. 19.—The distended levator. R is on the muscle, the middle R being placed on the two strong bands of it. (Slightly modified from Varnier.)

weakness of the muscle, we willingly admit that by "paralysis from compression, paralysis by lengthening, and physiological relaxation" it ordinarily yields readily to the presenting part, although it is driven against the muscle in the direction which the levator is best qualified to resist.

Obstruction to Labor due to the Levator.—Every one has ob-

served simple cases of this kind. The head, well rotated and well flexed, is driven through the pelvic canal at a normal rate until it reaches the pelvic floor. Then it pushes again and again against a pelvic floor which seems elastic enough but will not yield. After matters have come to a standstill for such a length of time that mother or child is suffering, when we apply the forceps we are astonished at the very small amount of force required to start the head, then the blades may be removed and Nature will finish the delivery. The explanation seems to be that during a pain all the muscles about the pelvis (and abdomen) contract. The levator shortens as well as the others, and with force sufficient to effectively bar any advance. Just enough traction to tire and overdistend the resisting fibres does away with the obstruction.

In a far more *aggravated form* obstruction to labor from contraction of the levator ani is met with. Budin speaks of cases of contracture where permanent thickening and shortening of the muscle have taken place. Serious obstruction will result, and craniotomy may be necessary. These cases must be very rare. Of the first variety he has collected five well-marked cases, and I am able to add an interesting case of my own :

CASE I.—Revillout: Muscular young woman. Suffered from extreme vaginismus. Finally impregnation was brought about by connection while she slept. A ring or bridle was found up the vagina which prevented even the application of forceps. It was supposed to be a cicatricial band and therefore incised. Autopsy showed it must have been levator.

CASE II.—Benicke: Strong young woman. Vaginismus excessive and lasting ten years. Head on pelvic floor; chloroform; forceps unsuccessful; craniotomy necessary. This was a contracture of many years' standing from which muscular changes had ensued.

CASE III.—Budin: Patient 20 years of age; vaginismus, strong levator; three days in labor; finally chloroform and forceps.

CASE IV.—Budin: Most intense vaginismus, strong levator. Whenever she partially came out from under the anesthetic, the contraction returned. • Forceps delivery.

CASE V.—Budin: Strong levator. Breech had to be delivered by traction, ergot, and expressio fetus, as the levator would not let it out. The head was imprisoned twenty minutes. Forceps; great resistance. Perineum intact, but levator torn. It did not unite (no suturing), and entire loss of power resulted.

CASE VI.—Dickinson: F. E. S., healthy and muscular, 23 years old, intelligent American. Considerable bleeding with first attempt at connection. Very constant and marked vaginismus from time of marriage to birth of child, but not excessive as in some of the other cases. Twelve hours in dilatation stage, L. S. A. Pains very vigorous. Muscular pelvic floor. When the breech began to distend the pelvic floor, no further advance was possible, and a delay of two hours occurred. The fetal heart became inaudible, the vagina somewhat hot and dry. Traction over groin used without avail. With much difficulty the hand was slipped past a ring just above the vaginal orifice to bring down a foot. The traction was greater than I have ever had to use in a breech delivery. After sweeping down the arms, the head was held firmly in the grip of a strong circular obstruction, so that delivery of it by the Smellie-Veit method (Mauriceau) had to be abandoned for the forceps. Cord not pulsating and child making respiratory efforts; obliged to apply considerable force; suddenly the obstacle gave way and the head slipped out.

Having no adequate assistance and a patient in whom chloroform produced excitement, yet being unwilling to dispense with voluntary efforts on the part of the mother, she was at no time anesthetized to the surgical degree. We readily see, what was not clear to me at that time, that complete relaxation of the levator would have been brought about by pushing the chloroform further. As it was, the fleshy perineal body was torn well down to the sphincter and the laceration ran up the posterior vaginal wall some distance. The vaginal sutures did not go deep; three external sutures were introduced.

Two and a half years later the condition is as follows: No sagging of pelvic floor. Perineal base one-half an inch long (1.3 cm.). Levator very strong. It has been torn on its inner edge between the rectum and the ischial spine one-quarter to one-half inch deep. The gap, the scar, and the difference between the right and left horizontal bellies are all distinctly felt. Traction force of levator, fourteen pounds.

From the fact that this badly crippled levator can exert much more force than the ordinary levator, we may judge of its vigor before injury.

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THE NON-RETENTION OF URINE IN YOUNG GIRLS AND WOMEN.¹

BY

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THE title of this article would seem to indicate the non-retention of urine in females from no matter what cause, but such is not my intention. I wish to include under its head those cases of obstinate non-retention due to other causes than cystitis and growths in the bladder.

Of all the diseases that flesh is heir to, I do not suppose there is any one more disagreeable, harder to cure, or more demoralizing to the patient than a disease of the bladder which calls for a constant evacuation of that organ.

¹ Read before the Obstetrical Society of New York, March 5th. See p. 959.

The particular object of this paper is to call attention to a class of disease which seems to be especially predominant in young girls from infancy up to maturity and, also, in some women of maturer years, when it is perhaps a sequel to cystitis; or the result of a not over-watchful mother in infancy, when force of habit becomes second nature; or follows a paralysis of the sphincter muscle. The disease I allude to is the gradual contraction of the walls of the bladder, due to a hypertrophy of the muscular coat, and the consequent reduction of its holding capacity to little or nothing. It has been my fortune to see quite a number of these cases, both in children and adults, and I have had the satisfaction of curing all but two of my cases completely, and that with no other aid than forcible dilatation by warm water. I do not propose to enter into the pathology of these cases, but simply give short histories, with the result which followed.

Nearly eight years ago, a young lady, daughter of a large banker in a neighboring State, was brought to me for my opinion as to her case. This was her history: She was then 17 years of age; her menstruation was perfectly regular and free from pain, and her general health was all that could be desired. Her only complaint was that she had never been able to hold her water for more than fifteen minutes during the day; and at night, when asleep, she had no control whatever of the bladder, the water constantly running out as fast as secreted. She had never known what it was not to wake up in the morning and find herself drenched with urine since she was two years old. She had to lead a rather secluded life; never could accept invitations to spend the night with her friends, as most young ladies do; and if she and her mother ever made a trip to this city or elsewhere, they always had to go armed with rubber sheets and their own cotton sheets to put on the hotel beds, so that this poor girl's infirmity should not be found out by the chambermaids. Can anything more distressing be imagined for a young lady of seventeen years of age? I doubt it very much. Such was her history. She had been the rounds of doctors, both in Philadelphia and this city, and had taken every known remedy for her condition, continuing their use for months at a time, but all to no purpose. This made me doubly anxious to relieve her. I first suggested an examination, which was readily agreed to. On account of her age and sensitiveness, I administered nitrous oxide gas and made a thorough examination of the pelvic organs and bladder. The former were in a perfectly normal condition, but I was rather astonished to find that the bladder measured only two and three-quarter inches from the *meatus externus* to its posterior wall. It was free from any foreign body, but I could feel the uneven, ridged surface of

the lining of the bladder, as if one fold of mucous membrane were lapped over another. As there was no history of any actual disease present, I could see but one conclusion to arrive at, and that was, that this was a case of "infantile neglect" to properly empty the bladder when Nature demanded. This continued neglect of Nature's calls resulted in the bladder becoming so reduced in size and capacity that in time it was so contracted that it could scarcely retain any water at all. During the day the patient could tell when the bladder was full and so empty it. This condition would bring about a partial paralysis of the sphincter vesicæ muscle, and consequently when the patient went to sleep at night this "small" bladder would fill up and overflow, and so keep her "in a pool of water constantly," to use her very words. The thought came to me at that time "that if I could only increase the capacity of the bladder sufficiently to hold the water secreted during the night, the patient would be cured." I had never heard or read, at that time, of the forcible dilatation of the bladder for the cure of such a case, though, of course, I was familiar with the washing-out of the bladder for cystitis, etc.; so I determined to stretch the folds of the coats of this bladder so it would be capable of containing more water. All I used was a silver catheter with a small rubber tube connected with it, and to this was attached a Davidson's syringe. The quantity injected could easily be measured by knowing that the bulb of the Davidson's syringe, when emptied completely, throws into the bladder exactly one ounce of water. The water used was just "comfortably warm." At the first attempt at dilatation, all the bladder would hold was one and three-quarter ounces. The washing was continued every day, each day getting into the bladder just a little more than the day before. The force used by me was sometimes, to the patient, "unbearable," and certainly very painful. But when a patient is anxious to get well, and is encouraged to bear "just a little more water" by the doctor, the progress made is sometimes most gratifying. The amount of water used in this case was increased at the rate of half an ounce to an ounce a day at times, and then again it would be some days before any further impression could be made. At the end of two months' treatment, this patient's bladder would hold twelve ounces of water, and for the first time in her life she awoke in a dry bed in the morning. From this on, the capacity of the bladder was gradually increased by the forcible dilatation until it would hold eighteen ounces of water, and that without very severe pain. The patient, as the capacity of the bladder increased, would only have occasional involuntary escape of the urine at night. This became gradually less and less frequent until she was discharged, cured, and a most happy woman. The treatment had lasted in this case three months. I see her now from time to time, and she reports that she has never had the slightest return of her old trouble.

I was more than happy to be able to relieve this poor girl of her terrible affliction by what I then thought to be an entirely original plan of treatment.

This forcible treatment is sometimes most painful, especially at the beginning, and the patient must needs have a goodly amount of courage to go through with it. In connection with the dilatation, I have sometimes had recourse to a mild faradic current, applied directly to the neck of the bladder by means of a Simpson sound connected with the battery. This sometimes helps to restore "tone" to the sphincter vesicæ muscle. The forcible dilatation should be used daily until there is a very marked improvement in the retaining capacity of the bladder. Then it can be done every second day for a month; later on twice a week; and finally only once a week until the final discharge of the patient. In all these cases so treated by me, I have never had to give any medicine other than tonics, or perhaps some mild nervine from time to time, as the symptoms would demand. As a rule, each case had been through a most thorough course of medical treatment, but without the least benefit.

I have said that at the time I treated the case just related I was certain I had struck an original idea, for I did not remember then of ever having heard of a case of "contraction" of the bladder treated in a similar manner. In looking up the literature of the subject, I find very little mentioned in regard to such cases, and only one case could I find reported where the incontinence was cured by forcible dilatation. This case was in a girl, after puberty, whom Braxton Hicks had cured "by mechanical dilatation with warm water," but in what quantities I could not find out. Dr. Skene speaks of "forcibly washing out the bladder, distending it a little more each time," as being "well spoken of." Sir Henry Thompson, Ultzman, and Winckel all speak of washing the bladder in cystitis, but only employ small quantities of water, from sixty to three hundred grammes. Baker (of Boston) washes out the bladder for *cystitis*, the quantity being governed by the patient's feelings. This he repeats from two to four times a day with a saline solution, but for *cleansing* purposes only. In some cases of incontinence, Ultzman recommends catheterization every three or four hours to relieve the sphincter vesicæ from action. Baker also recommends sea baths, diet, change of air, and

tonics. Fritsch has cured some cases of incontinence by narrowing the vagina just below the sphincter vesicæ muscle. Dr. Clinton Cushing, in the *Pacific Medical and Surgical Journal* for March, 1882, says: "There is another element in cystitis as a consequence of intolerance of urine, which is persistent contraction and hypertrophy of the muscular coat. Injections are recommended, but never more than can be borne without pain." In the treatment of enuresis in children and adults, I find no mention of dilatation among the many remedies given.

I only give the above few references just to show that there is no mention made of contraction and hypertrophy and its treatment by forcible dilatation, except the one case given by Braxton Hicks. All the other cases are spoken of in incontinence of urine due to cystitis, and, of course, we are all most familiar with the recognized treatment of cystitis by washing out the bladder.

Before finishing, I wish to mention briefly a few cases treated in the same manner as the first case, and with the same happy result.

The second case coming under my care was a young lady from Ohio, a Jewess, who had been unable to retain her water at night for years. She was then 18 years old and engaged to be married. This fact made her all the more courageous in undergoing the painful treatment. The urine showed no abnormal conditions. Her general health was perfect in every way. But just as soon as she would go to sleep at night, the water would begin to dribble away and keep up all night long. Her bladder was very much contracted, and at the first treatment I only succeeded in injecting a little over an ounce of water, the following day just a little more, and so on until I could get in six ounces very easily. To stretch the bladder from a six to a twelve-ounce capacity took nearly eight weeks, and required a vast deal of patience, and considerable pluck and forbearance on the part of the patient. At twelve ounces she began to hold the urine all night. (Very little water should be left in the bladder after each treatment. As soon as the limit is reached, the water should be allowed to escape from the bladder through the catheter at once.) As soon as the twenty-ounce limit was reached, I allowed her to go home; she was married shortly after. I heard from her three years after her discharge. She was perfectly well, and the mother of a boy.

My third case was a little school girl of this city, also a Jewess. She was 13 years old and had never menstruated. She had been in the habit of "wetting her bed" ever since early childhood. Her mother used to punish her, to try and break her of

the habit, but all to no purpose. From the meatus externus to the posterior wall of the bladder in this case the measurement was only two inches. The same condition existed as in the other cases. The bladder would hold only three-quarters of an ounce of water at the first treatment. This was gradually increased until ten ounces were reached. Then she began to hold her water for almost the first time in her life. This case was very tedious and slow, and the poor child showed a great deal of perseverance. It took five months to effect a cure, and when I discharged her she was perfectly well and could easily hold eighteen ounces of water in her bladder.

I had two other cases in young girls, like the foregoing, with histories almost identical and treatment the same, with the same satisfactory result, so I will not give them.

The next most interesting case was in a woman over 50 years of age, who had had several children and was a grandmother. Some years previous to her consulting me, which was three years ago, she had a violent attack of cystitis. This had been relieved by the usual treatment for that disease, but it left the bladder in such an irritable, contracted condition that she could not hold her water more than a few minutes during the day, and at night she had to get up to empty her bladder as many as thirty times. This had gone on for some years, and, as a consequence, the poor woman was much run down in health, tired and exhausted from want of sleep and rest. She had submitted to all sorts of treatment without benefit. The urine was free from pus, and her health was good with the exception of this hypertrophic condition of the bladder. One ounce of water was all the bladder would hold to start with. In this case I used a saturated solution of boracic acid and water in place of plain warm water. I did this because she had had cystitis. The bladder yielded to stretching quite rapidly in this case, and from day to day she reported less frequent rising at night, more sleep, and improvement in every way. In four weeks' time she had to rise only six times instead of thirty as before, and her bladder held twelve ounces of water instead of one ounce as at the beginning. She was under treatment three months, and at the end of that time her bladder held twenty-two ounces of water without difficulty, and she could go for six hours at a stretch without passing her water. She was then discharged as cured. A few months ago I heard from her, and she was perfectly well still.

In the two cases in which I failed to give relief, I was obliged to resort to the making of a vesico-vaginal fistula. I have had other cases which have been successfully treated, but those I have detailed are a few of the more interesting ones.



AN ISCHIOFAGUS MONSTER.

AN ISCHIOPAGOUS MONSTER.

BY
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Chicago.

(With woodcut and full-page plate.)

WHILE away on a short trip with a friend during the first week in July, I heard of a very remarkable monstrosity. The report came so well authenticated that I determined to investigate it. Sunday morning, July 7th, 1889, found us at a humble farm house near the border of Tipton County, Ind.



Skeleton of an ischiopage.¹

We were ushered into a small room where the wonderful babies with their mother were living. As we looked into the old-fashioned cradle, there appeared to us two separate and distinct infants, one slightly larger than the other, with their feet together and their heads lying in opposite directions.

¹ From Wood's "Cyclopedia of Obstetrics and Gynecology."

Nothing was exposed except the upper extremities, which showed two heads and faces, with the same complexions, color of hair and eyes.

When we asked the privilege of seeing them uncovered, we were flatly refused by the nurse, who said that under no circumstances would she do so. The news of "the remarkable freak of Nature" had spread far and near, so that the lives of mother and babes were in danger from the morbid curiosity of the people. Again, they had received so many flattering offers from men of the "dime museum" type that they looked upon all strangers with suspicion. We were much disappointed not to see them exposed, but, after interviewing the father and convincing him that money was not our object, he promised us, if we would return in the evening after all visitors had departed, that our wishes should be granted. We were promptly on hand at the appointed hour. The nurse conducted us to the cradle and lifted the clothing, revealing to us a perfectly symmetrical ischiopagus. It followed completely the law that "*when two or more individuals are united in composition of a monster, double, or more than double, the union takes place between homologous surfaces of the bodies.*"¹ Their bodies, as they lie upon their backs, are in the same plane, form a straight line, and are literally placed end to end, the place of union being the pelves. There are four well-developed feet and legs, two on each side of the line of fusion, and placed at right angles with the bodies.

Both are females. The genital organs and ani are situated on the side of the line of union, but occupy the normal position with reference to the legs on either side. There was a common umbilicus, which entered the bodies at the centre of the line of union. Both bodies, down to the iliac crests, are as well developed as babies ordinarily are at the same age. When the legs are outstretched they form with the bodies a complete cross.

Their weight at birth was twelve pounds, and their length twenty-two inches.

These wonderful babies were born to Mr. and Mrs. J. the night of June 24th, 1889, about 11:30 P.M. The labor was less than two hours in duration and was completed before the arrival of the physician. Fortunately, an old lady was near by who had

¹ W. W. Jaggard in "Cyclopedia of Diseases of Children" (KEATINGE).

had some experience as a midwife, and she was hastily summoned. In an interview with her I obtained the following interesting facts :

In reply to my inquiries, she said there was nothing previous to birth to arouse suspicion of anything unusual, except the extreme size of the woman, which had suggested the idea of twins. The enlargement extended high up toward the diaphragm.

When the midwife arrived at the bedside, the first head was already born. The pains were intense and close together, and the labor progressed rapidly until the pelvis was reached, when it was obstructed for a short time. The pains were soon renewed, however, and with a little assistance the labor was completed.

Each head, the midwife positively assured me, was born with the face directed to the back of the mother. The two legs in advance were born outstretched, while the other two were born folded on the body of the second child. The first child cried before the second one was born.

There were apparently two placentæ, firmly united together, and one very large and nodulated cord.

These wonderful children are still living. While one sleeps, the other may be awake ; when one cries, the other may be in a happy humor. The digestive organs, bowels, and bladders seem to act independently.

The most interesting feature of these twins is the anatomy of the parts between the crests of the ilei. Do the legs on one side belong to one child ? Or does one leg on *each* side belong to each child ? I was not permitted to lay my hands on them, and all the privileges I received were given with great reluctance, so that I cannot speak with the knowledge I desire on this point. The midwife says both spinal columns are perfectly straight, with only a short space between their lower ends. If that be true, it would indicate that one leg on each side belonged to each child. The attendants say that when one is asleep and the other awake and moving its legs, one leg on each side does the kicking.

While lying in the mother's lap, both babies can nurse at the same time, one from each breast ; thus partially folding on each other. I am inclined to think this is accomplished by bending the backs instead of the pelvic junction.

The mother is a well-developed, pleasant-faced woman, nine-

teen years old, of medium size and very dark hair. The father is a finely formed man, height about five feet nine or ten inches, and sandy complexion. There is nothing in the previous history of either parent which throws any light on this peculiar product. These babies are the result of a second gestation, the first being a well-formed child two years old.

Technically, the monstrosity just described is a very perfect example of a monomphalic ischiopage, described by Charpentier (Wood's "Cyclopedia of Obstetrics and Gynecology," vol. iii. page 311) as "characterized by the union of two complete individuals fused together at the umbilicus face to face. The bones of the pelvis of one fetus, instead of meeting in the median line, are separated to the right and left to join those of the other fetus. We thus find two lateral pubic joints. The external genital organs are similarly arranged, the right of one fetus being united to the left of the other, and *vice versa*."

In searching the literature on the subject, I find no recorded case of the same character born in this country. Preenay records one which lived several months; Serres another which lived a shorter time. There is the cast of an ischiopagus in the Mütter Museum, College of Physicians and Surgeons, Philadelphia, showing the legs on one side fused together.

Since writing the above I have seen and examined these children, and can give a more positive report on some points of doubt. The spinal columns are straight and in close apposition at the lower ends. There is not the space of a finger's width between them. There are two pubic joints and arches, one on each side, with the pudenda and ani below them.

The evidence is conclusive that the pelvic organs of each child are deflected to the right side, so that the genital organs, bladder, and anus of each child are situated on the right side. This is not true of the legs. The evidence is conclusive, at this date, that the legs belonging to each child are those nearest its body on each side. We still have them under observation, and hope to make another report some time in the future.

5 WASHINGTON PLACE, August 10th, 1889.

REMARKS ON THE LOCAL TREATMENT OF THE
UNMARRIED.¹

BY

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THE local treatment of the unmarried has been heretofore greatly neglected on account of a universally prevalent dread among the profession, as well as among the public, of interfering with the generative organs of the virgin or unmarried woman.

The reluctance that every true physician entertains, through his innate sense of modesty and his sympathy with his patient, as well as the praiseworthy and much-admired modesty of the young woman, has heretofore been, and always will be, an impediment to the proposal of this ordeal on the one hand and its acceptance on the other. That this is so speaks highly favorably for both the physician and the patient.

The fear of injuring the hymen, the symbol of virginity, has been another impediment, though the profession discovered long ago that the apparently intact hymen is not an absolute proof of virginity, nor that the reverse is by any means a proof to the contrary.

If local examination and treatment are considered necessary for the married woman, they are just as much needed for the unmarried, since the latter is subject, with few exceptions, to the same diseases, malformations, and deformities as the former. The methods of diagnosis and treatment should, therefore, be the same for the one as for the other, with the exception, however, of adapting the necessary means to the difference in size, shape, and accessibility of the diseased organs.

The general practitioner (and this applies also to many gynecologists) prescribes at guess remedies, of which he knows little, for diseases of which he knows less, because of the neglected diagnosis, in the usually vain hope of curing his patient without the infliction of a local examination.

¹ Read before the St. Louis Obstetrical and Gynecological Society, May 16th, 1889.

Thus the young woman will be subjected to a treatment which no one would think of practising in the case of a married woman, and her diseases will be permitted to go on unrelieved until they have become incurable, until her health is permanently undermined, or until she has made her future husband unhappy by burdening him with a sickly wife.

All this she has to tolerate for no other crime than that of being what she is—a girl, a virgin.

Such trifling is no longer admissible in the light of the present advancement of medical science. On the contrary, we should guard against falling into the opposite error, that of subjecting the young woman unnecessarily to local examination. Not unless the symptoms point unmistakably to the existence of derangements in the pelvic organs, and not then unless the disease which these symptoms denote needs local treatment, should local treatment be attempted. Should the question of the existence of intrapelvic disease not be fully settled in the mind of the examining physician, an attempt should be made to cure it by other means; but if, after a fair trial, these fail to show any result, then, without loss of time and without hesitation, a local examination should be made and the necessary treatment instituted.

It happens frequently that the patient and her relatives have come to the conclusion long before the physician that the case is one of a local character. Where this has not happened, it is quite surprising how reasonable both the mother and the daughter may be, and how grateful both will be to him who takes sufficient interest in the case to propose and recommend the unavoidable, however disagreeable it may be to both parties.

It is a great and often-committed mistake to counsel marriage for all diseases of young women. Most diseases of women are absolutely aggravated by marriage; few, if any, benefited. It would be far more sensible to see that every young woman was as nearly in a state of perfect health as possible before entering the bonds of matrimony. Much unhappiness and much regret could thus be prevented.

This conservative spirit, as described above, is, however, not universal, as many err on the opposite side by disregarding the differences existing between the married and the unmarried, and by treating both alike. By them the hymen is merely regarded as an obstruction to the necessary manipulations, and therefore

the quicker it is destroyed the better. Other rude manipulations usually go hand-in-hand with this, which is to be highly deprecated, as it casts a shadow on gynecology and deters many from seeking relief from their troubles until necessity forces them to accept anything, or until it is too late.

Many would rather suffer a lifetime than subject themselves to such harsh and, to their understanding, disgraceful treatment, because to a young woman the proof of her virginity is always her most precious possession.

Objection will rarely be made by the patient, where local treatment is found necessary, provided this be proposed in a kind and inoffensive way, especially if she can be assured that no other traces will be left of the treatment than her improvement.

If it is admitted that local examination and treatment of the unmarried are necessary under certain circumstances, and disruption of the hymen not permissible unless unavoidable from the character of the disease or for surgical operations, it becomes necessary to adapt the means for such treatment to the class of cases under consideration.

With the means as I have adapted them for this purpose, I have for many years past practised extensively among unmarried women of the middle and upper classes, and I cannot recall a single case where I or the patient had cause to regret the proceeding.

The instruments to be described are the speculum and pessaries.

The *speculum* is a modified Nott's rectal speculum. When closed, the three blades measure in circumference 5 cm. (about two inches); when opened to the full extent, the point embraced by the hymen measures a fraction over 7 cm. (about three inches), while the distal ends of the blades reaching to the vaginal fornix spread to the extent of $14\frac{1}{2}$ cm. (nearly six inches) in circumference. The length of the posterior blade is about 10 cm. (about four inches). These measurements correspond to the dimensions—i.e., length and circumference—of my index finger, which is rather long and slender, with the exception that the full expansion of the blades exceeds in its circumference that of the thickest part of my index finger by about 5 mm. (about a quarter of an inch).

It is rare to find the aperture in the hymen, even of very

young girls, after the attainment of puberty, smaller than would admit the introduction of my index finger without force or without causing pain. So seldom is this the case that I have learned to look upon it as abnormal.

When this abnormal contraction exists, not to excess, this speculum can be introduced, and, without spreading its blades to the full extent, all necessary applications to the uterus and vagina may be made without rupturing or overstretching this membrane. Even the tampon, for hemorrhage, repression of menstruation, or cystitis, can be safely inserted if desired. Also the applicator, electrodes, syringes, repositors, etc., can be used with facility. If desirable, the speculum can be withdrawn, while the electrode, etc., may be left *in situ*.

The diagnosis being properly made, and the use of the speculum found necessary, this will be introduced, closed, in the direction of the previously ascertained position of the cervix; then the screw by which the blades are spread must be gently turned until fully spread or pain is complained of; in this latter case, the last partial turn of the screw by which the pain was produced must be at once undone. Should the cervix not present itself within the blades, the instrument must be gently turned in the direction in which the cervix was found by the previous examination.

The advantages of this over all other specula for this class of cases are so apparent that I consider it unnecessary to specify or defend them.

Pessaries are not only useful but absolutely necessary instruments, in my opinion, for this class of cases, despite the recent wonderful improvements in gynecological practice and surgery. The smallest pessaries in the market, to the best of my knowledge, correspond in size to the No. 10 Hodge pessary. These are far too large and clumsy for most virginal cases, though; for some, much larger instruments are occasionally necessary. To supply myself with these smaller pessaries, I had a set of three circular rings, made of the best vulcanized india-rubber, of the thickness of a No. 9 American (or No. 14 French) catheter, with a diameter of 2 inches (5 cm.) outside measurement of the smallest, $2\frac{1}{8}$ inches (6 cm.) of the next, and $2\frac{1}{2}$ inches (7 cm.) of the largest size. The good quality of the material and thinness of the bar render them very flexible

with a moderate heat (spirit lamp, gas jet, or candle), and any kind of pessary can easily be shaped from these rings.

Anything that is useful or necessary in the shape of a pessary can be made of them. I make the Hodge pessary for backward displacements, and the Gehlung anteversion pessary for anteversion and antelexion, both with numberless variations to fit the respective case. The two smaller rings serve to make smaller pessaries than any I have seen in the market. They are highly necessary in the treatment of the unmarried. Wherever my index finger can be introduced, these pessaries can be introduced also, provided they are made like these I exhibit here. You see the Hodge form of pessary is very narrow in proportion to its length, but so also is the cavity for its reception. If the substance of the rings were thicker, there would be an insufficiency of space between the bars, and the cervix would become strangulated between them. This holds true also of the anteversion pessary, especially the smaller sizes, in which the bars are also nearer together.

I hope that some of the members present may have superior instruments for this purpose in their possession, and give the Society the benefit of them.

DO MATERNAL MENTAL IMPRESSIONS AFFECT THE FETUS IN UTERO? ¹

BY

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A CONTEMPLATION of the vagaries of the human mind is always interesting and instructive, and no less engaging is the consideration of the physical deformities of the human body; but when we reflect on the suggestion that a freak of the mind may determine the configuration of the physical body, the thought excites the profoundest wonder and may claim the closest scrutiny. An innate love of mysticism makes easy our belief in the traditions of our fathers, and, though reason scouts at superstition,

¹Read before the Washington Obstetrical and Gynecological Society, April 5th, 1889.

there is a lingering belief in omens of good and evil. That there is physical deformity of the human body is a painfully apparent fact. And since the days when Jacob laid the peeled rods at the drinking troughs before the rutting flocks of his father-in-law, that they might bring forth ring-streaked and spotted young, the belief has been current that the mother's mind influences the development of the fetus in utero. But examined by cold logic in the early morning when the mind is free from cobwebs, keeping in view the laws of symmetrical development which cannot be warped by the desires or emotions of a susceptible mother, the belief does not appear to have any foundation in reason or fact.

To make this clear, it is only necessary to follow the ovum in its voyage from the time it leaves its mooring in the Graafian follicle in the stroma of the ovary, passing through the canal of the oviduct into the harbor of the uterus, where, if it has been fertilized, it may find safe anchorage by the development of a placenta and an umbilical cord. From the moment of the escape of the ovum from the Graafian follicle, it is separate and distinct from the mother, and will be cast out as effete unless it becomes vitalized. Should this floating egg become fertilized, what changes take place? Instead of being thrown out as dead, it finds a hospitable lodgment within the cavity of the uterus, where it imbibes nutriment from its succulent tissues, until after a while its vascular system is developed and its circulation is carried on by means of the umbilical cord and placenta. It is needless to enter into detail as to this circulation, as it is well known there is no direct vascular connection between mother and fetus; the villi of the fetal vessels dip down into the placental sinuses supplied with blood from the uterine vessels, and by a process of dialysis nutriment is furnished to the fetus. Not only is there no vascular connection, but there are no nervous filaments communicating from mother to fetus. What, then, is the deduction from the fact that a developing creature finds a congenial lodgment within a cavity of a body, and, without direct vascular or nervous connection, draws pabulum from that body for its own growth and development until it is ready for separate and independent existence? It is that the developing creature bears the relation of a quasi-parasite to the body in which it resides. And this is the relation between fetus and mother. A fetus in utero is as much a parasite as is

a tapeworm in the intestinal canal, or as the babe that draws its sustenance from its mother's breast. Now, then, if the fetus in utero has no direct vascular or nervous connection with the mother, but draws nourishment by endosmosis and bears to her the relation of a quasi-parasite, how far can maternal mental impressions affect the fetus in utero? To my understanding it is clear that the mother's mind has no power to localize hypertrophy, nor determine atrophy, nor inhibit development of any particular part of the fetus in utero.

On the other hand, many maintain the contrary doctrine, and assert that pregnant women who have had ardent longings for certain articles of food, as fruits and vegetables, are extremely liable to give birth to children on whose bodies will be found a representation, true in form and color, of the particular fruit or vegetable desired. A pregnant woman is frightened by a snake crawling into her house; she points to it with her right index finger and immediately faints: she is subsequently delivered of a child whose right index finger is so transformed "that the end of it is devoid of everything like a nail, save in those points which correspond in size and position to the eyes and mouth of a snake, and presents almost an exact resemblance to the head of a serpent." A lady in the beginning of her first pregnancy sat at table opposite to three sisters, each of whom had harelip. The first sight of them made her so faint that she left the table and did not return. She was afterward delivered of a child that had double harelip. After the birth of the child, the mother told her attending physician that she *knew* the child would have harelip, as she had dreaded it all the time. Why there were only two fissures and not three, as the mother saw three harelips, is not apparent. Here we have instances in which it was said the deformity was produced in the fetus by a profound excitation of the emotions of desire, instant fright, and dread on the part of the pregnant woman.

Per contra, a wife, the mother of twelve daughters, was and had been desirous of giving birth to a son, and she and her husband had often condoled together that, out of their numerous progeny, there was no male heir to perpetuate the father's name. The wife had about abandoned all hope of having a son, as several years had elapsed since her last pregnancy, and she was approaching that age at which women usually become sterile. They were pious people, and the matter had been a

subject of frequent prayer. The husband, remembering that Sarah had borne a son to Abraham in her old age, was more hopeful than his wife, so he took into his confidence Aunt Jane, a noted midwife in that region, who had a reputation for being familiar with all that related to pregnancy and parturition, and was also a firm believer in the influence of maternal mental impressions upon the fetus in utero. Her instructions were that in the act of copulation the husband and wife should assume certain postures which were minutely described by Aunt Jane, but are not necessary to be detailed here, and under these conditions impregnation would certainly occur. Having accomplished that, it would only be necessary for the mother to look at the man in the moon and to *ardently long for* the desired son. Time went on, and in due course of events the wife became pregnant, and, in obedience to Aunt Jane's injunction, she diligently watched the moon through an entire lunation. She carried in her mind a picture of a beautiful boy, and when she felt the first movements of the child in her womb her heart was filled with joy, and she fondly believed that ere long she would be the possessor of what she so ardently desired—a son. In due time she was brought to bed and delivered of her thirteenth daughter, who was well developed in every particular, except that in the centre of her forehead was a large, round nevus. As the child grew, this nevus presented most striking peculiarities; and it was observed that the moon exercised a most remarkable influence upon it, in that the nevus presented a roseate elevation upon its surface, which corresponded exactly in shape with that portion of the moon which was luminous at the time of observation—that is, when the moon was young, the nevus presented a crescentic roseate elevation, while the remainder was of a dusky hue; and as the moon grew, the elevation increased, until at full moon the entire nevus was elevated above the surrounding surface and was of a blood-red color; and as the moon waned, the elevation retrograded in the same degree, so that the phase of the moon could be determined by an inspection of the nevus. I cannot vouch for the truthfulness of this narration, though it is as plausible as many others that are backed by authority. It is related simply for the purpose of propounding the inquiry, How did it happen that the beautiful boy *so ardently longed for* by the mother did not materialize, but in his stead came the shockingly blemished

girl? I might recount numberless instances in which pregnant women apprehended fearful deformity in their unborn children, yet their fears were happily not realized. A soldier lost his leg in battle. After his return home, his wife became pregnant, and both were apprehensive that the child would be born minus a leg; yet it was delivered without the slightest deformity. If the emotions of strong desire, instant fright, or dread on the part of the pregnant woman could mark, alter, or destroy any part of the fetus in utero, then why may not these emotions mark, alter, or destroy the entire body? Certainly one is as plausible as the other, and, if such power did exist, what a welcome condition of things it would be to a woman illegitimately pregnant! With the strongest desire to be rid of her incumbrance, and an ever-present dread of her condition being discovered, the fetus should melt before her hot emotion as the snow beneath the noonday sun; yet no such case has ever been known. Fortunately the laws of development are not so easily abrogated by the emotions of the mother, or we would have a nondescript race inhabiting the earth in the place of man. There is an excusable desire on the part of mothers to account for any blemish on their children by attributing it to some extrinsic cause, and they can usually find some explanation in their imaginations that is entirely satisfactory to them, but which should have no influence upon the mind of one who understands the connection between mother and fetus. Again, many and perhaps the majority of deformities occur without the mother having been conscious of any special mental shock. Then, too, in the vegetable kingdom, there are many departures from normal growth. What is the influence that determines this?

There is in a panel of a door in my house a good illustration of this departure from normal growth. The appearance of the *spot* is quite striking. Viewed from one direction it shows the outline of an owl; from another point of view the profile of a woman's face, disconsolate in appearance, is distinctly seen. Perchance this panel of wood is from the identical tree under which the historic melancholy maiden knelt in prayer when she asked that a husband might be sent her, and from the branches of the same tree, doubtless, came the voice of the owl saying "Whoo! whoo!" And the maiden, in the joyful anticipation of the realization of her fondest hopes, cried out,

"Anybody, Lord, so it is a man!" Such a scene could but produce a deep impression. The images of the participants were indelibly graven on the heart of the tree. It is remarkable with what precision and nicety wounds and the like that have been witnessed by pregnant women are said to be reproduced on that portion of the body of the fetus corresponding with that part of her own body upon which she placed her hand when she saw the wound. In a recent medical journal, a case is reported in which a pregnant woman saw a child circumcised, and when her babe was born it was minus its foreskin, and even had marks of the sutures *identical* with those upon the surgically circumcised child. Where did the mother place her hand in this instance? And suppose her child had been a female? I know that negation is not proof, but the justness of the following conclusions makes it as certain as can be without positive demonstration that maternal mental impressions cannot affect the fetus in utero.

1. There is a wide-spread belief among women that maternal mental impressions do affect the fetus in utero, yet there are more instances of congenital deformity, including birth marks, occurring in children whose mothers had no particular mental shock or apprehension of any special defect in their offspring, than happen in those whose mothers had strong mental impressions that some defect would exist.

2. In plural pregnancies, it is absurd to suppose that one fetus can be affected by maternal mental impressions to the exclusion of the other.

3. A woman with her nervous and vascular system in perfect working order cannot by the processes of her mind, either voluntary or involuntary, affect the nutrition of any *particular part* of her own body. There is no nervous or vascular connection between the fetus in utero and the mother, but the fetus bears the relation of a quasi-parasite to the mother; hence it follows that maternal mental impressions *cannot* affect the fetus in utero.

IMMEDIATE RESTORATION OF THE PERINEUM AFTER
LABOR.¹

BY

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I MUST crave the indulgence of this Society for bringing before it a subject so worn and threadbare, upon which so much of worth has been written of late. I must plead as my excuse for so doing the fact that I am constantly meeting with cases who are suffering from the effect of neglected perineal tears, and that a large number of these cases¹ give the same history, viz., that after delivery they were not examined by the attending physician.

When asked by such a patient, "Ought not this tear to have been immediately restored?" I always say, "That is a question which one cannot answer now without consulting your attending physician, for many conditions of the system might have made it unwise at the time." Although the teaching of many eminent men makes such an answer possible, still I must say that the conditions or combination of conditions which might make it either unwise or dangerous to perform immediate perineorrhaphy are very rare. The excuse that these tears do not always unite seems hardly worthy of discussion; for if the stitches do nothing else than to lessen the risk of septic absorption, they are well worth the trouble of introduction.

In studying this subject, there seem to be two powerful reasons which lead many physicians to neglect the immediate restoration of perineal tears.

The first of these reasons is the mistaken idea, which is held by both the laity and by many physicians, that the obstetrician is always responsible for the perineal tear. The layman has been led to believe that if some older, some more experienced or more careful physician had been employed, this very large child of his would have been brought into the world through this very small opening without any injury to the latter.

¹ Read before State Society, June, 1889.

Some of our best teachers on the subject of gynecology are apt to lean to such ideas. Only a short time ago I heard a physician, who is one of the best of teachers, tell his patient that a certain laceration of the cervix and perineum from which she was then suffering would not have occurred if her physician had seen her earlier in confinement and given her a little chloroform. Now, such a theory as this is certainly unfounded, and, more than all, is very unjust to the obstetrician. For suppose the woman to have been small, that she has had a very rapid labor with a large child, so that the parts have not had time to dilate; or, if the labor has been dry or tedious, so that the child's head has rested too long in one position, and the tissues have suffered from pressure and have failed at the last simply from the loss of vitality. Or suppose the labor to have been abnormal from the position of the child—occipito-posterior, brow, or face presentation, or where it has been necessary to introduce the hand into the vagina or to deliver with forceps. In any or all of these conditions, ought we to say that the fault is with the obstetrician, and, on the other hand, should we not rather be surprised when the woman passes through such a labor without laceration? The proper teaching, it seems to me, should be that in certain cases laceration is unavoidable, and that the fault lies not so much in the production of laceration as in the overlooking of it.

There are certain procedures advised by different authorities for the prevention of this accident, viz., support of the perineum, pressure on the advancing head, chloroform, use of the forceps, and episiotomy. Now, we know that the first four of these methods will accomplish much in careful hands, where the careless use of these same means, especially the forceps, will produce great harm. Still, in certain cases, any or all, however carefully used, cannot prevent a certain amount of perineal laceration.

In regard to the last method, episiotomy, I speak from a theoretical standpoint, for I have never seen it performed nor used it myself, because I have never seen a case which I thought called for the operation. Of course, if in a certain case I thought the woman could not be delivered without a complete tear of the perineum, rather than see the laceration extend through and into the rectum I would most certainly perform episiotomy. But as the history of complete perineal

tears shows that they cannot always be foreseen, and as many of these injuries commence in the recto-vaginal septum above the apex of the perineal body, and as we are only made aware of the injury by the external explosion, therefore I am forced to think that episiotomy can but seldom be advantageously used. What do we actually accomplish by this operation? The knife is applied to the side of the vagina during a pain, at a time when the parts are strained to their utmost; the mucous membrane, the fascia, bulbo-cavernosus, or sphincter vaginae muscle, and possibly some fibres of the levator ani muscle, are divided, allowing the anal segment of the pelvic floor to drop back, and in this way giving room for the child's head to pass. We now have to deal with an anatomical injury which sometimes occurs in a severe labor without the intervention of this operation, and which produces in after-life a condition called relaxation of the vagina, where, although the woman has a complete perineal body, she still suffers from loss of power—the power of contracting the introitus vaginae and of supporting the rectum—and as a consequence she suffers from cystocele, rectocele, or perhaps prolapsus. Episiotomy, therefore, produces one variety of laceration of the perineum, and one which it is neither easy to limit nor to repair.

The second, and perhaps the most important, reason why the physician hesitates about making this simple perineal operation lies, it seems to me, in the operation itself as it is now usually performed.

The professional mantle of Baker Brown, with his wonderful ingenuity in accomplishing a certain result in the most impracticable way, seems to have fallen upon us all. In deciding for or against this operation, the physician recalls the suffering and the pain which he has seen follow it, requiring large amounts of morphia; he remembers the bandaged limbs and the nurse with her dirty catheter, and decides that the cure is almost worse than the disease; consoling himself with the thought that some of these tears unite without any operation, and others suffer no inconvenience in after-life although badly torn.

If you separate to any great extent the limbs of either a living or a dead woman, you will find that the labia majora can be but very slightly separated, and that the labia minora cannot be separated at all. Keeping this fact in view, we see that

bandaging of the limbs is of no value, and also that the deep constricting stitches which are passed from the skin surface of the perineum are not as necessary as has been supposed; for if the stitches are properly set, there should be no strain upon the parts. The same is true in secondary perineorrhaphy, providing that the denudation has not been carried too far out upon the labia in striving to bring together parts that were never in contact. Deep silver stitches have their place, but should not be the only sutures used in the perineum, and for several reasons. First, that, in order to bring the sides of the wound together and close the mucous edges of the tear, the wire must be very tightly twisted; and even then we cannot be sure that the tear in the mucous membrane, the most important part, is accurately apposed. Second, the twisting of the stitches draws the perineal body downward just enough to bring the highest point of the perineum in front of the meatus urinarius, so that the first time the woman urinates part of the urine flows backward into the vagina, irritating the raw surface, producing nervous retention, and thus necessitating the use of the catheter, which is always a deplorable circumstance. The stitches often cut, leaving irritable perineal scars which must heal by granulation, and give as a result a skin perineum perfect externally, but of no physiological use to the woman. In disposing of the free ends of the stitches, they are usually bound together, so that touching or moving one moves them all, producing a great deal of unnecessary pain.

The operation that I have to propose in the place of the ordinary perineal operation is as follows: When by examination with the finger, or by both the finger and the eye, a perineal tear has been discovered, the woman is immediately brought to the edge of the bed in the lithotomy position, and a sponge wrung out of a strong bichloride solution is pushed into the vagina above the upper angle of the tear, to keep the blood from obscuring the sight during the suturing. Use a short, round needle threaded with a chromicized or sublimated catgut suture, and a short pair of needle forceps, all of which should be carried in the obstetric bag. Commence the stitch in the upper angle of the tear, and, after making it fast, enter the needle on one side of the wound just below the edge of the tear in the mucous membrane, bringing the needle out in the bottom of the wound; re-enter the needle at the bottom of the

tear, bring it up to, but not through, the mucous membrane on the other side of the tear, in this way whipping together and uniting the wound with an over-and-over continuous buried stitch, bringing the mucous membrane accurately in apposition, and leaving no part of the suture exposed on the mucous surface. On the skin surface, one or two interrupted catgut stitches will close the skin edge of the perineum. For this suture, sublimated or chromicized catgut is the best, because it either absorbs at the end of about two weeks or becomes incysted and produces no irritation.

If thought necessary, a single silver-wire stitch can be introduced on the skin surface of the perineum simply to act as a splint. The free ends of the wire should be controlled by a compressed shot. This will produce no irritation, no pain, and is the best way of securing all silver stitches whenever it is necessary to use them for the restoration of the perineum.

By this method of operation, the anatomy of the perineum is not disturbed; the highest point of the perineum is left behind the meatus urinarius, so that when the urine is passed it does not flow back into the vagina; consequently it is very seldom necessary to use the catheter. The pain after this operation amounts to almost nothing; even a single one-quarter grain suppository of morphia is seldom required, and, according to my experience, the failures to unite are very, very few.

In my last seventy cases of confinement, covering a period of a year and a half, I have used this method exclusively, and with the most satisfactory results, both to myself and to my patients. During this time I have had eight perineal tears which I considered as necessitating suture. All but one of this number united perfectly, and in not one was there any rise in temperature showing septic absorption. They have all been able to pass water without the use of the catheter. So far in this paper I have not taken up the subject of complete perineal tears. The restoration of such an injury would not differ from the above operation, excepting that I should first introduce a buried catgut stitch which would bring together the mucous membrane of the bowel, and afterward the buried stitch as mentioned above.

The after-treatment of a woman after perineal suture does not differ from the ordinary care of a woman after confinement—light diet; antiseptic vaginal douches only when the

lochia, pulse, and temperature show any danger of septicemia. The bowels should be moved by an active cathartic on the morning of the third day, and the woman kept in the recumbent position for about fourteen days.

I do not claim originality for this operation, but I do claim a great superiority over the ordinary perineal operation, and I am sure that if the members of this Society who have been accustomed to use the old silver constricting or bunching stitch will give this method a single trial, they will never subject their patients to the inconvenience and pain—I may almost say tortures—of the older method.

SUPPURATIVE MASTITIS FOLLOWED BY SEPTICEMIA AND METASTATIC PAROTITIS.

BY

W. H. WENNING, A.M., M.D.,

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MRS. H. W., aged 38, was delivered of a living child February 20th, 1887. There was nothing abnormal about the period of labor and childbed. Subsequently a severe attack of internal hemorrhoids, for which the patient was treated by me during the month of April, was relieved by the use of suppositories. The child was from the beginning of a delicate nature, subject to frequent attacks of colic (probably brought on by irregular feeding), which culminated finally in a severe attack of gastro-intestinal catarrh complicated with a troublesome eczematous eruption. On May 20th, the mother consulted me at my office on account of a slight abrasion of the nipple. Greater attention to regularity in nursing the child, and absolute cleanliness in regard to the care of the nipple and the child's mouth, were insisted upon, and a solution of tannin and glycerin ordered as a local application to the nipple. Whether or not this was attended to, in about one week later all the evidences of an incipient mastitis were present. Compression was resorted to, together with emollient applications, the bowels freely purged, and the child not allowed to nurse from the diseased breast. Notwithstanding these precautions, an abscess of the left breast began to form a few days later, with all its concomitant physical and mental disturbances. During this time, the child, deprived of its proper nourishment and already much

debilitated by its gastro-intestinal disorder, gradually wasted away, and finally died of acute meningitis on June 17th. The abscess in the mother's breast was promptly opened about one inch and a half below the nipple, in the median line of the breast, which discharged about one teacupful of pus. This gave immediate relief, but soon other lobes of the gland began to be affected in a similar manner, both to the left and right of the original abscess. It was with the utmost difficulty that a proper examination of the breast could be made, as the patient would not permit touching the affected organ. Under pretence of probing the first opening, I succeeded in entering the abscess on the left by a keen thrust of the probe and thus draining it through the first opening already made, as the patient would allow no further cutting. Afterwards, however, I succeeded in opening also the abscess on the other side of the nipple with a bistoury. Things were at this stage when the child died. In spite of the great physical pain and mental worry, the mother had not had up to this time much constitutional disturbance, and fever had not been very high. On June 19th, however, the day of the child's burial, the mother was seized with a violent hysterical attack (to which she had been subject before, as she was of a very nervous temperament), which was followed by a sudden onset of fever. On my arrival, I found the temperature 107° , pulse 140. Previous to this the temperature had never risen over 102° . The pulse was full and bounding, the skin hot and dry, the whole body seeming aglow. I had the patient at once stripped of all her clothing and wrapped in a cold wet sheet, and gave thirty grains of quinine in one dose internally. Besides this, ten-drop doses of tincture of *veratrum viride* were ordered to be given every hour till further notice. This had the desired effect of reducing the temperature several degrees in a few hours, but the patient still seemed to be in a very precarious condition. An examination revealed an increase of dulness in the region of the spleen and a swelling in the right parotid gland. Dr. Forchheimer was called in at this juncture by the husband, and confirmed my diagnosis of septicemia and metastatic parotitis. This swelling continued to increase until it reached the size of a man's fist, when suppuration set in and an enormous amount of pus was discharged upon incision. The breast, which had been washed out daily with an antiseptic solution of bichloride of mercury, gradually though slowly began to heal up. The patient began rapidly to gain flesh and improve under tonic treatment after the septic symptoms disappeared. She was discharged as fully recovered at the end of July.

This case is of great interest because some points are unusual. These are the period of lactation when the abscess occurred, and the great constitutional disturbance caused by its presence. Mastitis occurs almost exclusively during the time of greatest activity of the lacteal function, namely, following puerpery.

A disturbance in this function is most likely to occur, first, at its very beginning, immediately following childbirth; and, secondly, towards the end of activity of that function, namely, the period of weaning. Hence, we find acute mammary troubles occurring either in the first four weeks of lactation or about the tenth month. In the former, they are excited by the establishment of a new function struggling under difficulties, especially in primiparæ; in the latter, by irregularities in the gradual cessation of that function. Between these two extremes, mastitis rarely occurs in the middle period of lactation, as in the case reported.

Winckel places the general liability to mastitis at six per cent in all nursing women; only one in fifty patients suffering from mastitis had not nursed her child.¹

Nunn records 58 cases of puerperal mastitis; of these, 33 occurred in the first two months (19 in the first and 14 in the second) and 17 after the tenth month. The remaining 8 occurred from the third to the ninth month of lactation.

Whilst inflammation of the breast is not a rare affection in nursing women, its termination in suppuration is not so frequent an occurrence at the present day as formerly. This is due in no small degree to the better appreciation of the value of certain methods of aborting suppuration. Even after inflammation has occurred, when the first stage of engorgement has not been passed, we may hope to prevent the formation of an abscess by proper treatment. This is very simple, and may easily be expressed in two words: *compression* and *rest*. But, as in many other things, both will be insufficient if not properly carried out. By compression is not meant the ordinary bandaging of the breast as often practised, which simply *supports* the breast, but the systematic, thorough, firm, and equal compression of both breasts in their entire periphery by a stout, smooth roller bandage. In one instance, I obtained excellent results by the use of a wide Martin's rubber bandage, but it cannot be borne by the patient very long, as its tension is rather painful. Compression must be equal in all parts of the mamma.

By rest is meant rest of function. The child should not be allowed to nurse if there be any evidences of mastitis arising. After the breast has been emptied of milk, compression can be more easily effected and re-engorgement prevented.

¹ "Pathologie u. Therapie des Wochenbetts.," 3, Auflage.

But, fortunately for the safety of the nursing mother, even if an inflammation of the breast proceed to suppuration, septicemia or pyemia rarely results. All works on puerperal diseases of the breast mention the possibility of such an occurrence, but I have not been able to find the record of a single instance of septicemia following mastitis, except secondary to a general septicemia, as may occur in septic metritis, etc. The most salient points in my case are the evidences of septicemia and metastasis. The relationship of these two pathological conditions is undeniable in the case reported, as also the fact that the latter acted salutary to the former—in other words, the patient would have died if the morbid product had not found an outlet through the secondary inflammation and suppuration of the parotid gland. It may be asked, Why should septicemia arise after an abscess had already formed and been opened in the breast, thus giving free exit to the poison? It must be remembered that several lobes of the gland became affected in succession, and it is not impossible that the germs were carried along the lymphatics before one of the newly formed abscesses was opened. How much the moral or mental depression may have had to do with this symptom it is difficult to understand. That moral impressions may powerfully effect certain pathological changes, probably temporarily arresting Nature's efforts at eliminating morbid products, is proven by sudden fatal changes, occurring in other diseases, referable to such causes. The possibility of pyemia occurring even after an abscess had been opened is already mentioned by Kiwisch in his work on puerperal diseases. Winckel endeavors to explain this by the theory that the ingression of air during the opening of the abscess may cause septicemia. In the case reported, as already mentioned, it is also possible that the lymphatics had absorbed the poison before the abscess was opened, and the discharge of pus occurred too late to prevent systemic infection. The great distribution of connective cellular tissue round and about the milk follicles, some of which are deeply imbedded in this meshy structure, will permit a considerable burrowing of pus in the vicinity of the affected acini before the outer surface is reached, and facilitates the absorption of pus by means of the lymphatics. It is really surprising that such does not occur more frequently. The most remarkable feature in this case, however, was the suddenness of the onset. Before the nervous outbreak caused

by the illness and final death of her child, the mother's symptoms of mastitis showed nothing unusual. The death of the child, indeed, caused the outburst of a violent hysterical spasm, but at this time it was not accompanied or followed by a rise in pulse or temperature. That the sudden rise two days later was not simply of nervous origin is evidenced by the subsequent appearance of the parotid inflammation. The only explanation remaining is that the profound mental shock caused a sudden depression of the vital powers, suspending the "resisting power of Nature" in an already debilitated subject, by which the poison pervaded the whole system and finally expended itself in the parotid gland, whence it was ultimately discharged, thus saving the life of the patient. For from the first onset of this symptom until the localized inflammation in this gland appeared, the patient was in a precarious condition.

The intimacy existing between the parotid gland and mammary gland in the female is well known. Trousseau mentions this fact in his lecture on mumps. He says that whilst in man there is a sort of vicarious action between the parotid gland and testicle, in woman it is not the ovary but the mammary gland that thus enters into a mutual relationship. He cites, however, also the instance of a young girl in whom menstruation and parotitis alternated with each other; here showing the relationship of the uterus, and probably ovaries also, with the parotid. Hennig mentions an instance where a metastatic mastitis occurred after a parotitis in a typhoid-fever patient. It is known that a metastatic mastitis may occur in the course of a puerperal lymphangitis or phlebitis in the generative organs of woman. In fact, such a complication in severe cases is regarded as rather favorable because it is usually followed by a diminution of the symptoms of septicemia. It must be noted, however, that in all the instances just cited metastatic mastitis was secondary to suppurative inflammation in other organs, whereas in my case the mastitis was primary and parotitis secondary. Billroth's views regarding metastasis when it occurs in the mammary glands in puerperal fever may find a place here; he says: "Whether a mastitis arising during a puerperal fever is of a metastatic nature (that is, if it is to be placed on a parallel, with abscesses as they sometimes occur in other organs and in the cellular tissue in pyemia) is hard to say. There seems to be no doubt that a very extensive suppurating mastitis may lead to

pyemia; it would therefore not appear strange, reasoning from other observations, if slight cases of puerperal disease of the genitals, which usually heal without difficulty, should, under the influence of a pyemia caused by mastitis, go on to marked supuration. Under these circumstances, it would be difficult to decide which of the purulent foci found on section was the primarily infecting agent and which the infected. Hennig mentions the case of a metastatic mastitis occurring in the course of typhus fever after a preceding parotitis'' (already quoted above).

A very important factor in the etiology of mastitis is also established by the case reported, namely, the influence of sore nipples in the production of parenchymatous inflammation of the breast. All late authorities are agreed on this point, and, in the view of new light thrown on this subject by Bumm and Escherich in the recent discovery of particular cocci in the pus of such abscesses, the rationale of infection through the nipples is easily explained. According to Bumm, there are two ways by which microbes may enter the breast: through surface lesions and through the acini ducts. The former offer the most common and ready entrance for the germ; bacteria have, however, also been found in the milk in lobes which were not inflamed. This is difficult to explain, unless it be supposed either that not all of the milk is discharged from the lobules, or that the surface lesions in the nipples are so minute as to be invisible to the eye and cause no pain to the mother. For it is easy to understand how these germs may enter from without through apertures ever so small. The fissures in the nipples may be very minute and yet large enough to afford entrance to the infecting element. Two forms of micrococci have been found in the breast: the *staphylococcus aureus* and the *streptococcus pyogenes*; the former causes parenchymatous, the latter phlegmonous inflammation of the mammary gland. In many instances the infecting agent may be carried to the breast of the mother by the mouth of the child—a mode of infection easily explained when there are fissures in the nipple. One French author, quoted by Velpeau in his work on "Diseases of the Breast," goes so far as to say that in all cases of fissured nipples these may be ignored altogether in the treatment, and attention should be solely directed to the mouth of the child.

¹ "Cyclopedia of Obstetrics and Gynecology," vol. ix.

Whilst not subscribing to so extreme a view, I am of the opinion that many a mastitis may be caused in this way, and hence the mouth of the child should be examined carefully. It is not improbable that, in the subject of this paper, mastitis occurred through the mouth of the child infecting the nipple of the mother, when we bear in mind the gastro-intestinal troubles of the child. Certain it is that such a contingency should influence us in the treatment of abraded nipples, especially as a means of prophylaxis.

With the development of bacteriology, the etiology of many inflammatory processes has been better understood. Many such causes as "cold, mental emotions, exposure," etc., which have always been and still are in many instances a cloak for ignorance, have fallen to the ground or are at best ranked only as secondary or predisposing. So also the important rôle played formerly by retention of milk as a cause of mastitis has been dropped by all recent authorities on this subject. It is only admitted in so far as it may facilitate the decomposition of milk and hence favor the development of bacteria. To my mind, however, it is inexplicable how the simple accumulation of milk without the admission of air can at all give rise to decomposition. It is possible that bacteria may enter the un-abraded nipple through the orifices of the lactiferous ducts themselves, and thus cause decomposition in the stagnant milk. In the healthy breast, this is prevented by the constant flow and thorough emptying of the gland.

The discovery of this particular bacillus may not influence the treatment of a case of suppurative mastitis when once established, except perhaps in confirming the antiseptic treatment both before and after suppuration; yet it teaches us a valuable lesson in the importance of prophylaxis. The possibility of infection of the breast through the nipple should be ever borne in mind, and hence such measures adopted as will prevent this occurrence. First of all, injury of the nipple should be guarded against. Improper modes of dress, too violent efforts at sucking by the infant, especially in primiparae, coupled with a want of proper cleanliness—all these causes may open up avenues for infection. The slightest abrasion should be looked after, and its orifice sealed against further infection, either by the use of such agents as the solid nitrate of silver, which coagulates and covers up the raw surface, or the appli-

cation of antiseptic lotions. It has already been stated that some abrasions may be so slight as to evade detection and yet large enough to admit bacteria of infection. Undoubtedly many instances of mastitis have been attributed to engorgement of the breast when the disease was carried from the nipple to this organ. Lacteal engorgement is simply an increase of physiological function; it may lead to increased blood supply and venous stasis, and hence predispose to suppuration, if the opportunities for infection are offered; but it is not likely that suppuration will take place unless the infectious element, the micrococcus, is carried to the seat of stasis and there finds a favorable soil for further development which ends in suppuration.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

Stated Meeting, March 5th, 1889.

The President, DR. HORACE T. HANKS, in the Chair.

LAPARATOMY FOR PROBABLE TUBAL PREGNANCY SUBSEQUENT TO RUPTURE.

DR. H. J. BOLDT.—The first specimen which I have to present was removed a week ago yesterday from a patient who last September had what was considered to be rupture in the course of tubal pregnancy. She thought she was six weeks pregnant, and while driving out experienced sudden pain in the right inguinal region, and fainted. When she had recovered consciousness, she found herself at home in bed. Subsequently a mass formed in the right side of the abdomen which gave her considerable pain. When, last October, she came to me, I felt a tumor which seemed firmly imbedded in the pelvis and was attached to the abdominal walls, extending nearly up to the umbilicus. She was transferred to the hospital, and there had general peritonitis, during the course of which the abdomen was opened. The mass previously felt was found so firmly adherent to the intestines, uterus, and everywhere that the finger could reach, that it seemed foolhardiness to attempt its removal. The abdomen was washed out and closed, and chances of recovery taken. She remained in the hospital, and subsequently had several attacks of peritonitis, and was unable to get up or move about without suffering extreme pain.

About two weeks ago Dr. Polk saw the patient, and he thought that, under the circumstances, it might be advisable to attempt removal of the tumor. As had been expected, when the abdomen was opened very firm adhesions were found binding the mass to the intestine, broad ligament, and uterus, and, after working about for some time, an unthought-of pus cavity, deeply situated, was broken into, and a large quantity of pus escaped into the abdomen. The operation was completed, and the mass removed is here presented. I am unable to say what it is. Here seems to be the tube. There is no evidence of placental or fetal remains. If the diagnosis previous to the operation was correct, we may suppose this is the ruptured tube, around which exudations and a pus cavity formed afterward. But I should like the pathologist to examine the specimen and report at a future meeting.

MULTILOCULAR CYST OF THE OVARY WITH GREAT VARIETY OF CONTENTS.

DR. BOLDT.—The second specimen I present merely to illustrate the great variety of contents which are sometimes found in an ovarian tumor. The tumor was removed from a girl aged twenty-five years. The first and second compartments contain colloid material, a third contains bloody serum, a fourth contains the ordinary serum found in ovarian tumors, while a fifth contains flocculent, milky fluid. The partitions were very dense, necessitating the use of a sharp instrument in breaking them up. It may be mentioned that the ligature seemed to have slipped from the very broad pedicle, and when I was about to close the abdomen profuse hemorrhage was observed, and it was necessary to reopen the abdomen and take out all the intestines before the source of hemorrhage could be secured by a double row of sutures. The patient is doing very well. I would ask the experience of the members regarding such a diversity of fluids in an ovarian tumor.

DR. H. MARION SIMS.—I have seen a large number of ovarian tumors, but do not remember one containing such a variety of fluid as the one just presented. About five years ago, I removed one which contained three varieties of fluid. The tumor weighed over fifty pounds, and the patient was over seventy. The larger compartment contained about fourteen pounds of a substance like butter or oleomargarin, and in it was silky, blond hair and a large piece of scalp with a curl attached. In the next compartment there was flocculent fluid, while a third contained serum.

DR. G. M. TUTTLE.—A short time ago, I removed a tumor which contained at least four varieties of fluid. The case was seen by two distinguished members of this Society, who thought, on account of the hardness of the tumor, that it was a fibro-cyst. When I came to remove it, however, it proved to be a cyst of the ovary, the density of which was due, as in Dr. Sims' case, to butter-like contents.

THE PRESIDENT.—Dr. Coe will probably recall several cases at the Woman's Hospital where ovarian tumors contained at least four varieties of fluid. One was in a patient of my own.

DR. TUTTLE.—As bearing on the diagnosis in Dr. Boldt's first case, I would mention that some time ago I presented a specimen to this Society removed after rupture in extra-uterine pregnancy. The sac was thick, but showed no placental or fetal remains.

DR. BUCKMASTER.—In discussions on extra-uterine pregnancy, we very frequently hear remarks regarding the placenta. If I remember the teachings of embryologists, the placenta is not formed until between the third and fourth month, and I do not understand how during the second month we can expect to find the placenta.

DR. H. C. COE.—I think Dr. Buckmaster has made a very proper criticism. If one will look over many of the recorded cases, he will find that reference is made to the finding of the placenta, without mention of the duration of pregnancy. Dr. Hunter expected to bring a specimen this evening which illustrates the fact that at an early date we find, not a placenta, but a development of the chorionic villi.

DR. TUTTLE.—I think the commonly accepted term early in pregnancy is chorionic villi. The whole sac is surrounded by villi up to the third month; it then begins to get bald and to form the placenta, but it seems to me to be at that period just as much a placental development as later.

DR. BUCKMASTER.—The point may be a technical one, yet there is a practical aspect of the matter which makes it important to keep the terms distinct.

THE PRESIDENT remarked that in cases of miscarriages of one or two weeks only, placental tissue will not be found, and only chorionic villi will be present.

TUBAL PREGNANCY—OPERATION.

DR. TUTTLE.—The first specimen which I have to exhibit bears upon the subject just discussed. It is the third case of tubal pregnancy which has come into my service at the hospital within a short time. It is the only one which I have operated upon before rupture of the tube. I had wavered in diagnosis between pyosalpinx and tubal pregnancy, leaning toward the former. The woman was admitted to the hospital a little more than a year ago. I did not see her at that time. A small mass was felt at the left of, and posterior to, the uterus. Believing it bears strongly upon the history of the case, I lay special stress upon the fact that a tumor was then found in the exact position of the one which I recently removed. The woman at that time had a leucorrhœal discharge, and the tumor, according to the hospital records, was considered probably ovarian. The patient left the hospital somewhat improved. During May and June of last year she was reported to have had two convulsive seizures, the spasms being clonic and the patient unconscious. Nothing more definite could be learned of their nature. Later in the summer she began to bleed profusely, the hemorrhage lasting two or three days, and was accompanied, as she said, by the expulsion of clots and flesh-like substance. She bled continuously from September 29th until admitted to the hospital in November or December. I then found the cervix enlarged and soft, but no material evidence of preg-

nancy. There was a tender tumor to the right of the uterus, firmly fixed by adhesions. The uterus was enlarged, and from it was a constant sanguineous discharge. After opening the abdomen, the diseased appendages on the left side were removed first, in order to give greater mobility in operating upon the more involved right side. There were adhesions in all directions. The right tube was much enlarged, and its walls were so thin that it appeared on the point of bursting. A portion of the omentum had to be ligated and pushed out of the way before the sac could be reached. The tube, as large as one's fist, was then removed intact. Through the translucent walls a black substance, supposed to be a blood-clot, was seen, which proved, after careful microscopical examination made by Dr. Thatcher, to be a small embryo, about an inch in length, hanging by a thread-like cord, probably the umbilical cord. Under the microscope can be seen the chorionic villi which rendered the diagnosis positive. The highest temperature after the operation was 99.6° F.

DEATH FROM INTESTINAL OBSTRUCTION FOLLOWING REMOVAL OF
THE UTERINE APPENDAGES.

DR. TUTTLE.—I have less pleasure in showing this specimen, as it represents a surgical disaster. It is from a case, specimens from which were previously presented to the Society, operated upon for pyo-salpinx. The tubes were universally adherent, but were removed without difficulty, as the adhesions were not very firm. The vermiform appendix was also adherent in the mass. The patient went along several days without an unpleasant symptom, but after four or five days there was evidence of intestinal obstruction.

Recent experience with a similar case, in which recovery took place without interference, the uncertainties always involved in diagnosing complete obstruction, and the apparent good condition of the patient, led me to hesitate, and I was advised to do so by one of our best-known surgeons. The patient died very suddenly, before I had made up my mind to open the abdomen to relieve the obstruction. Many of the symptoms of intestinal obstruction were not present. There was no diminution of the urinary secretion, although the obstruction existed in the small intestine; vomiting became stercoraceous in the later stage. My only reason for not opening the abdomen was that I thought in pursuing this course I was giving the patient a better chance. I thought the adhesions would probably prove extensive and of a kind that I would not be able to relieve. I have tried the procedure, and have seen it tried by others in most extensive adhesions, and nothing could be made out regarding the location of the obstruction.

In examining the specimen, it will be observed that there is a knuckle of the small intestine formed by the gut bending upon

itself, and the two portions becoming bound together by recent adhesions, forming so complete an obstruction that air will not pass through. Below the obstruction the intestine is completely collapsed. In the light of the autopsy, it is probable that the obstruction might have been found and overcome by an operation. The adhesion and resulting obstruction evidently were due to an aseptic peritonitis. There were no adhesions at the stump.

EXTRA-PERITONEAL CYST.

DR. TUTTLE.—A third specimen which I had intended to exhibit was accidentally lost. It was a small extra-peritoneal cyst, enucleated with great ease from between the layers of the broad ligament, having apparently originated from the hilum of the ovary. This case proved successful. I had an unsuccessful one a short time ago.

GONORRHEAL SALPINGITIS.

DR. TUTTLE also exhibited two specimens of tubal disease of probable gonorrheal origin.

DR. E. H. GRANDIN thought the first case cited by Dr. Tuttle well illustrated the great difficulty of diagnosing extra-uterine pregnancy. Although the operation proved that condition to exist, there were no symptoms, or only very obscure ones, pointing to it before. Dr. Tuttle was to be congratulated on his success.

DR. BUCKMASTER.—In observing cases in which death occurred after laparotomy in the Woman's Hospital, I was impressed by the comparative number of cases where pus was found in the tubes, and I could not help thinking that perhaps the peritonitis which sometimes resulted after the operation might be due to the condition of the end of the tube. I would ask Dr. Tuttle whether, when he tied the tube off, he took any precaution to prevent infection from the remnant of the tube.

DR. TUTTLE.—My custom has been to touch the uterine end of the tube with the actual cautery, and, while the rest of the cavity is protected, bathe that part with a solution of corrosive sublimate, 1 : 1,000.

DR. BUCKMASTER.—This appears to me to be very excellent practice. I would like to make a point in connection with exploratory operations where the intestine has to be removed from the abdomen for any length of time, as, for example, when one has to search for an obstruction. I refer to wrapping the intestine in a piece of flannel instead of in towels. The flannel is not disturbed, but is maintained at the proper temperature by wrapping hot towels about it. This keeps the intestine warm with much less disturbance than by the usual method.

DR. MALCOLM McLEAN.—I would inquire whether Dr. Tuttle takes precaution as to the degree of heat to which he raises the cautery. I have seen it suggested, but do not remember where, that, if the cautery be too hot, carbonaceous matter will be left in the stump, which acts as a foreign body; whereas if it be just below that degree, it will leave only an eschar, the digestion of which will be perfect and no irritation will result. What I have done lately in this line of surgery has been followed, as in Dr. Tuttle's

case, by touching the stump with the actual cautery whenever it is in such a position that the cautery can be used with safety to the other tissues, and I have always taken care to use a dull red heat, and to sear the parts very gradually, so as to whiten the tissue only.

DR. BUCKMASTER thought it was Mr. Keith who had called attention to this method of searing the stump.

DR. H. MARION SIMS.—I was very much interested in the recital of the case of twisting and agglutination of the gut. It now seems too bad that Dr. Tuttle did not operate. I have had only two cases, both after laparotomy. In the first case, the small intestine was involved, and fortunately I reopened the abdomen soon enough to untwist the obstructed part, and the patient recovered. In the second case, the patient was very weak from exhaustion, the obstruction had continued longer, it was difficult to find on account of great distention of the stomach and upper portion of the intestine (the twist was in the large gut), and the patient died of shock. I believe that where symptoms point to the existence of intestinal obstruction the abdomen should be opened at once.

In reply to Dr. Boldt's question, he said the first symptoms in both of his cases were distention of the abdomen, then nausea, throwing everything off the stomach, then fecal odor of the breath, then stercoraceous vomiting. Dr. Boldt having further asked whether he waited until the appearance of stercoraceous vomiting before operating, Dr. Sims replied that unfortunately he did in one case, the fatal one.

DR. BOLDT.—The subject of intestinal obstruction, and in fact the reopening of the abdomen for any purpose, is extremely interesting. If we wait for stercoraceous vomiting, I believe the patients, as in Dr. Sims' case, will die, while many of the other cases, with all the symptoms of obstruction excepting that of stercoraceous vomiting, will recover without reopening of the abdomen and the shock attending a second operation. To speak candidly and openly, I am somewhat afraid of reopening the abdomen shortly after the first operation. I have done it, and the results have not been very good, and for that reason I always feel great hesitancy. At the same time, if we wait until stercoraceous vomiting has occurred, which of course makes it very clear that intestinal obstruction does exist, the chances are then that the patient will die. The question always arises, When is the proper time to operate, and when shall we be sure that our diagnosis is correct? A great many of those cases with a distended abdomen and constant vomiting can be relieved by other methods.

DR. TALBOT inquired of Dr. Sims how long it was after the first symptoms of intestinal obstruction occurred in his cases that stercoraceous vomiting took place.

DR. SIMS.—About thirty-six hours. In connection with Dr. Boldt's remarks, I may say that, if I were going to operate at all, I should not again wait for stercoraceous odor, or at least for stercoraceous vomiting. I think that where one has reason to suspect intestinal obstruction somewhere, and has employed other means, such as the use of cathartics, turpentine enemata, or other well-known remedies, without success, he should not hesitate longer to open the abdomen.

DR. COE.—I have been surprised that obstruction takes place comparatively so seldom after laparotomy, for I have often found at autopsies adhesion of the gut to the pedicle or the abdominal

wound, and I am convinced that the constipation and persistent pain which occur in many cases after laparotomy are due to such adhesions, which have been too slight to cause obstruction.

THE PRESIDENT.—I would ask Dr. Tuttle whether, in his case, opium had been used to any extent.

DR. TUTTLE.—No; it is not our custom to use opium.

THE PRESIDENT.—Just now we are in the transition stage between opium and no opium, but instead saline laxatives; for that reason it is interesting to know in such cases whether pain had been controlled by opium, and when saline laxatives have been given.

DR. TUTTLE.—At present there seems to be no more interesting subject in the department of gynecology than that of intestinal obstruction after laparotomy. My own experience has been very limited, yet within a month preceding this one I held a consultation over a patient in the same ward, the consultant advising opening the abdomen. I based my own opinion—which was opposed to that of the consultant, whose judgment and experience surpass my own—on the general character of the pulse, appearance of the patient, and complexity of the symptoms, which I cannot explain, but which made me feel that the patient's condition was not as bad as it seemed to be. The abdomen was greatly distended for many days, yet the patient got well. In that condition, it seemed almost foolhardy to open the abdomen and attempt to find and relieve the obstruction. In the other case, its insidious course was deceiving. There was no rise of the temperature nor of the pulse until after the occurrence of stercoraceous vomiting.

At one of the most interesting meetings in Germany last year, Spencer Wells reported fourteen cases of death due to intestinal obstruction following laparotomy. Hirsch reported fourteen cases, in all of which death occurred, except in one which was saved by laparotomy. The members present at the meeting were much at variance regarding the indications for going in and relieving the obstruction. There was nearly always hesitation, and the cases were generally looked upon as very unfavorable.

DR. BOLDT.—I would ask Dr. Tuttle what laxative he selected in this case. The sulphate of magnesia has been recommended very highly by Lawson Tait, and some gentlemen here have also used it with satisfaction, yet I have been unable to get my patients to retain it.

It has come to be nearly a universal rule to have the bowels move soon after laparotomy. I endeavor to induce them to move as early as the second day, sooner than do most operators.

DR. GRANDIN.—Inasmuch as it is now generally admitted to be a good plan to keep the intestines moving after laparotomy, and thus avoid or limit adhesions, what objection can there be, if any, to giving a laxative on the second day? I would prefer a Seidlitz powder to Epsom salt. I cannot conceive of anything more nauseating to a weak patient than Epsom salt. Seidlitz powder is certainly as good a derivative as the salt, and aids in keeping the intestines in motion. That, I believe, is one of the points on which stress should be laid, namely, to keep up peristalsis and thus limit adhesions in case peritonitis sets in. The consensus of opinion to-day is certainly in favor of laxatives in beginning peritonitis.

DR. H. MARION SIMS.—I generally try to get the patient's bow-

els to move at least as soon as the third day after laparotomy, but I do not trouble myself about it on the second day. I think much depends on the characteristics of the patient and the condition of her stomach in choosing a cathartic. I find in some cases that a dose of Rochelle salt will do well; in some, Epsom salt; in others, Seidlitz powder. I recall two cases in which, Seidlitz powder failing to excite peristalsis, I used cascara sagrada with satisfaction. The fluid extract of cascara sagrada has the effect of increasing the peristalsis of the intestine, especially of the lower portion. Those are the remedies which I usually depend upon, together with an enema containing a teaspoonful of turpentine.

DR. TUTTLE.—I have been accustomed to move the bowels early. I have seen no unfavorable effect from the use of sulphate of magnesia. In one patient troubled with vomiting, I introduced the salt through a tube, and thus the stomach was enabled to retain it. I have been accustomed to use Rochelle salt with very small doses of opium, say one, two, or three minims of Magendie's solution, especially at night, in cases where peristalsis excited pain. Nor have I hesitated to give an enema at the end of the first twenty-four hours. But in grave cases I think patients are very likely to vomit any kind of salines.

DR. CLEMENT CLEVELAND.—I have been depending lately on calomel in very small doses, frequently repeated—for instance, one-eighth or one-tenth of a grain every hour. Usually after the seventh or eighth hour there is a very free movement. I repeat the method every other day. I have found it so satisfactory that I now use it in most cases.

Contrary to the experience of the other gentlemen who have spoken, I have been very well pleased with the use of Epsom salt, not after laparotomy, but after operations on the perineum where rupture has been through the sphincter. I have been in the habit of giving teaspoonful doses of a saturated solution with a little Vichy every hour. Given in that way, the salt is not very disagreeable.

DR. SIMS.—I have also used calomel in the manner spoken of by Dr. Cleveland, a good deal, and have found it to act very well indeed.

DR. BUCKMASTER.—I remember that at the Woman's Hospital, when it began to be the custom to move the patient's bowels early, it was found that beef juice acted as a cathartic; and, after a time, we learned to use this first for this purpose, and if it did not answer something else was tried.

DR. CLEVELAND.—Dr. Buckmaster's remarks on salted beef juice as a laxative remind me of rather an amusing experience which I have had with it in a case of rupture through the sphincter ani. I sewed up the perineal rupture with silver wire, and the rupture through the rectum with catgut. On the second night I gave sixty grains of compound licorice powder without effect. The next night I gave sixty grains more, and I continued giving sixty grains of this preparation each night until Saturday night, the operation having been done on Monday. Sunday morning the bowels had not yet moved. The woman had been taking beef juice, and nothing else, as food all this time. I then began giving teaspoonful doses of a saturated solution of Epsom salt in Vichy water, and after the fifth dose she had a free movement. In this case, the beef juice seemed to have no laxative effect whatever.

DR. BOLDT.—The laxative which has so far given me the best results has been teaspoonful doses of sulphate of soda, taken in a glassful of as hot water as the patient can drink, repeated every three hours until the desired effect has been obtained.

THE PRESIDENT.—I have been in the habit of carrying Fraser's preparation of calomel in the form of triturated tablets, which contain about one-fifth of a grain, and in laparotomy cases I leave ten or fifteen at the bedside of the patient on the second or third day, with instructions to take one every hour until the bowels move. It does not produce nausea; on the contrary, if nausea is present it often allays it. I have also found that Epsom, Glauber's, or Rochelle salt is best given in Vichy water.

MODIFIED WATHEN'S UTERINE DILATOR.

THE PRESIDENT.—Having seen an illustration in the *Medical Record* of Wathen's dilator, I bought one, and found it a useful instrument. It seemed to me, however, that some improvements might be made in it, and I therefore had one constructed with shallower corrugations, and with somewhat narrower shoulders, so as to obscure less of the vaginal opening when operating, and also with a small screw between the handles to prevent the separation of the blades as they are being introduced. The modification is simply to make a very useful instrument still more serviceable. It is so much cheaper than a number of more complicated instruments, and it accomplishes rapid divulsion with such certainty, that I thought it worth while to call attention to it. I believe it to be the best instrument of its kind in the market.

DR. TALBOT thought the instrument was the same as that described about two years ago in the "American System of Gynecology" under the name of Schultze's dilator.

DR. GRANDIN.—The instrument which the President has presented I have tried on one occasion, and believe it to be the best for purposes of divulsion that I know of. The one which I used had been modified somewhat at Dr. Morrill's suggestion. The tip of the instrument was curved—a fact of some importance in this case, because there was a sharp uterine flexion which would have made it difficult to insert a straight dilator. I divulsed the cervix in five or six minutes. Another advantage which the dilator possesses is that it can be taken apart and be thoroughly cleansed.

MYXO-ADENO-SARCOMA OF THE UTERUS.

DR. PAUL F. MUNDÉ.—About three months ago, I presented a specimen of myxo-adenosarcoma removed from the cervix uteri in a girl. I have since looked up the literature of such cases, and reported this one in the February number of the *JOURNAL OF OBSTETRICS*. I found there were only nine similar cases on record. The patient on whom I operated has since died, and her physician obtained a post-mortem examination. The uterus and ovaries were removed entire. It will be seen that the tumor, which has reproduced itself in the vagina, although not as large as what I removed, still shows very clearly the appearance presented at the time of the operation. In all the cases reported, the tumor soon

returned after removal and rapidly became sarcomatous. The condition is as fatal as it is rare.

SUBMUCOUS FIBROID OF THE FUNDUS UTERI.

DR. MUNDÉ.—I have another specimen which is by no means so rare. Indeed, I should not present it if it did not illustrate the necessity for waiting until such tumors located in the fundus uteri are forced down where they can be easily reached in removal. The patient came from a neighboring State about four months ago for hemorrhages. I discovered a very large uterus, and, on passing the sound, struck something which led me to make the diagnosis of probable intra-uterine fibroid. I dilated the canal with tupelo tents, passed my finger in, and found a submucous fibroid projecting from the uterine wall. I dare say I might have removed it, although the cervical canal was long; but, having had experience with such cases, I feared a most difficult operation, and concluded to induce the tumor, if possible, to work its way down into the cervical canal, where it could be readily reached. I gave ergot, made frequent dilatations of the cervix with tupelo tents, incised it up to the vaginal junction, employed the faradic current, and thus succeeded in quite rapidly forcing the tumor down. Soon it appeared at the external os, and I made preparations to go and remove it the next day, but found on my arrival that it had returned again to its former position. The same trick was played me a second time, but on the third occasion when I found the tumor down I did not wait until the next day, but returned prepared for its removal within two hours. It being at the external os, I was able to remove it without difficulty. I have mentioned the case to emphasize the fact that to operate on sessile fibroid tumors high up in the uterine cavity is exceedingly risky and not at all necessary.

STRANGULATION IN AN OVARIAN TUMOR BY TORSION OF ITS PEDICLE.

DR. MUNDÉ.—The third specimen which I have to present illustrates more forcibly than I had ever seen before the slight symptoms sometimes produced by torsion of the pedicle of an ovarian tumor, and the condition which very soon would result in gangrene and perforation of the cyst. The tumor was removed from a woman about fifty years of age, who entered the hospital with no symptoms except pain in the abdomen. On examination, I found a tumor reaching to about the umbilicus, and, without aspirating it, pronounced it ovarian. I decided to operate, and at the time the only symptom was pain. The temperature was not elevated. Immediately on opening the abdomen the tumor appeared, and seemed to be in a gangrenous condition. It sprang from the left ovary and was uniformly adherent. On lifting it up, having aspirated it to avoid the escape of fluid into the abdomen, one of

the gentlemen present remarked: "That looks exactly like the umbilical cord," referring to the pedicle, which was twisted a distance of two inches and until it seemed the tumor would be twisted off. The patient's recovery was uninterrupted.

OVARIAN CYST.

I have still another specimen, a small ovarian cyst removed from a woman who had had an attack of pelvic peritonitis, but at the time of the operation had no severe symptoms whatever. Fresh adhesions had formed all around. I present the specimen simply to show the desirability of removing such tumors early, before the formation of strong adhesions.

DR. COE.—The subject of torsion of the pedicle is a very interesting one. I remember having made an autopsy upon a woman who, unfortunately, had not been operated upon. There was complete torsion of the pedicle of an ovarian cyst, the sac being filled with tarry blood. The only symptom in that case was the sudden development of acute peritonitis, which ended fatally in about thirty-six hours.

DR. BUCKMASTER raised the question, from which side the cyst in these cases sprang, and in which direction the twist took place, to the right or left.

DR. MUNDÉ replied that in this case the cyst was of the left ovary, and the twists were all toward the left side. They were at least five or six in number.

THE PRESIDENT.—Regarding Dr. Mundé's case of fibroid tumor, I may state my firm conviction that in two cases the continuous use of ergot for five or six months brought the fibroid down to the os externum, where I could reach it and easily ligate it as one would an ovarian tumor.

DR. GRANDIN.—I would like to ask Dr. Mundé whether there is any objection to, or advantage in, incising the capsule of submucous fibroid tumors before administering ergot, or whether the ergot is just as effective when the capsule is not incised.

DR. MUNDÉ.—I had my instrument ready to incise the capsule in this case on two occasions, but it occurred to me that if the tumor were not removed immediately afterward it might become gangrenous, as I had seen take place before.

Dr. Mundé further stated that he did not wish to be understood as advocating quiescence in cases of submucous intra-uterine fibroids generally. It was only where the tumor was situated high up in a deep canal that he first employed such preliminary measures as would bring it further down to make possible ready removal. He would rather do laparotomy and enucleate the tumor through an incision into the uterus than go high up into the canal.

DR. H. MARION SIMS then read a paper entitled

THE NON-RETENTION OF URINE IN YOUNG GIRLS AND WOMEN.¹

DR. TALBOT.—I have had some experience in a case somewhat similar to those just narrated by the author. At the outset the patient had a cystitis. I tried every means of curing this, employing hot-water injections, nitrate of silver, boracic acid,

¹See original paper, page 917.

etc.; but all these means causing so much pain, I finally settled down to the use of simple hot water poured off of ground flaxseed. That relieved her more than anything else. While she did not have absolute incontinence, yet she was compelled to urinate every ten or fifteen minutes, night and day. Belladonna did her some good. While I did not think of the method described by Dr. Sims, I did notice, by the graduated measure from which the injections by the Davidson syringe were daily made, that on each successive day more and more fluid could be introduced. At first only one or two ounces could be injected, but after continuing the treatment about seven months the bladder would hold twelve ounces. I had been dilating the bladder more for the purpose of having the flaxseed tea reach all parts than with the idea of curing the case by dilatation. The patient has no longer to rise more than once during the night to micturate. She is practically cured.

DR. MALCOLM McLEAN.—It may be remembered that, a year or two ago, I presented a pessary at the meeting of this Society which I had devised for the especial purpose of mechanically occluding the urethra, and thus holding the urine in the bladder, stopping in that way the enuresis and also dilating the bladder by the presence of fluid. I do not mean to intimate, however, that I acted entirely upon the mechanical theory which Dr. Sims has so clearly set forth. I did speak of the fact being recognized that the bladder got so it would contract and became intolerant of the presence of water. I presented an imperfect instrument at that time, and had I known what was to be the nature of the paper this evening I would have been very happy to show a more perfect one which has grown out of that first used. I now have a case under treatment by this means, and the patient is growing more and more tolerant of urine retained behind this pessary. I agree with the reader of the paper that there is no class of cases in which the patients more deserve the sympathy of the physician and his best efforts for their relief. The patient now under my care is about seventeen years of age, and she had not had a dry bed as far back as she could remember until three nights ago. The past three nights she has gone without wetting the bed, having been under my treatment only six weeks. The pessary which I use, and believe to be unique, acts by elastic pressure from the direction of the anterior vaginal wall *toward* the symphysis pubis, the counter-pressure being on the abdominal surface. Some women are not tolerant of it.

DR. COE.—Applying the ordinary laws of hydrostatics, it would seem that steadily increasing pressure upon the bladder during the injection would be better borne, and would perhaps accomplish the results more smoothly, than by intermittent pressure through a Davidson syringe. I have found, in irrigation of the bladder, that patients tolerate continuous irrigation much better than the intermittent stream. By elevating or lowering the funnel which I always employ, the amount of pressure can be regulated at will.

DR. TUTTLE.—I have had no experience with this method of treatment, but, with reference to Dr. Sims' statement that in these cases the bladder is hypertrophied, it would seem desirable to have some definite pathological knowledge instead of relying only upon the fact that the sound could not be introduced. I have often found myself unable to introduce the sound but a short dis-

tance into the female bladder, but I attributed that fact to simple physiological collapse of the viscus, the base of which had become folded upon the trigonum. I do not think the test of measurement can be much relied upon unless supported by other evidence. I believe neurologists do not attribute these cases of enuresis to concentric hypertrophy of the bladder, but to affection of the centre of urination in the spinal cord, and they claim to be successful in its treatment by measures directed to the nervous system.

DR. H. J. BOLDT.—I have been very much gratified in listening to the testimony contained in Dr. Sims' paper, for the method of treatment pursued by him was taught me by Dr. Oscar Nissen, of Christiania, who has employed it since 1874. The bladder, in consequence of incontinence, seems to become hypertrophied, and in order to overcome that Nissen stretches it by the introduction of water through Kuestner's *blasenspuel apparat*. A continuous instead of an intermittent stream is thus introduced until the bladder has been distended to its utmost capacity. This treatment is continued daily, and, in addition, Brandt's method of massage is used, whereby the bladder is stimulated and becomes tolerant. The finger is introduced into the vagina, and the neck of the bladder, avoiding the urethra, is stroked down, not by steady pressure, but by a quivering motion of the finger. If I remember correctly, Dr. Nissen told me that he had by these means cured all of his cases. Cases of cystitis are not referred to.

DR. MUNDT.—It may seem strange, but I have seen no cases of contraction of the bladder which were not cases of cystitis. I have seen many of these, and have treated them on the principle of dilatation, but I cannot say that I carried it out as thoroughly as Dr. Sims has done. I think he deserves a great deal of credit for the persistency with which he has treated his cases. I shall try to imitate his example.

DR. JOHN BYRNE.—Some of the gentlemen who have discussed the paper seem to have overlooked the fact that it does not treat of cystitis, but simply of contraction and hypertrophy of the bladder walls, brought about by want of physiological distention for a long period, which we know does take place. With regard to the treatment of contracted bladder with hypertrophy, resulting from cystitis, it is hardly necessary to say that those who have been in the habit, as I have been for many years, of treating obstinate and otherwise incurable cases of cystitis by colpocystotomy, have found over and over again, though the cystitis had thus been cured, the fistula subsequently closed, and the patient practically well, that the capacity of the bladder might be limited. The principle of gradual distention by fluids has always been recognized and practised for such conditions. I think there is nothing new in the method of treatment, in so far as it may refer to that class of cases. But the author refers to another class—those in which there has been enuresis from childhood, and which are extremely difficult to treat by all ordinary measures—and I think he deserves much credit for bringing forward a successful method.

DR. W. D. McKIM had seen some cases of congenitally short sacro-uterine ligaments, which condition he thought would account for certain cases of enuresis. He could conceive how, in such cases, distention of the bladder with injected water might be of benefit by stretching the abnormally short ligaments.

DR. SIMS.—With regard to the use of flaxseed tea, I have often injected two or three ounces after distention of the bladder, in order to allay irritation and a feeling of soreness. I have not seen Dr. McLean's pessary, but should like to. I have tried the fountain syringe, but, strange to say, found it more painful than the Davidson syringe, and I was better able with the latter to regulate the amount of water injected. Dr. Tuttle asked why I spoke of the condition as one of hypertrophy of the bladder walls. I can only answer that it is commonly so called, and I know of no other word which better expresses the contracted and thickened condition of the walls. I am very glad to learn, through Dr. Boldt, that the method has been used with success for so many years in Sweden. I had not known it. I might repeat that in all but one of my cases the enuresis existed from infancy. In the other, the cause was stated in the paper.

TRANSACTIONS OF THE GYNECOLOGICAL SOCIETY OF CHICAGO.

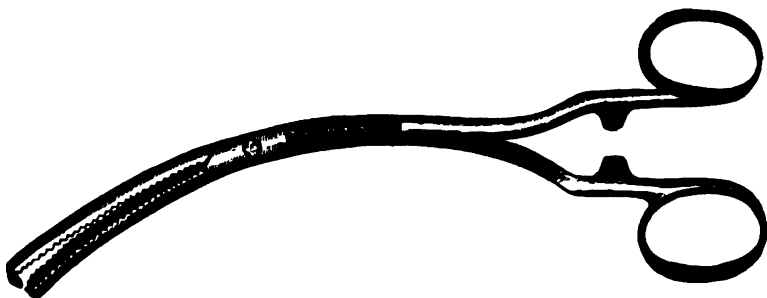
Regular Meeting, Friday, April 19th, 1889.

The President, CHARLES T. PARKES, M.D., in the Chair.

DR. HENRY T. BYFORD exhibited

FORCEPS FOR THE BROAD LIGAMENT IN VAGINAL HYSTERECTOMY.

These forceps were designed exclusively for the broad ligament in vaginal hysterectomy. Their peculiarities are that they have



a pelvic curve, are a little longer than the ordinary large hemostatic forceps used, while the lower blade is a little longer than the upper one and has a projection so as to catch over it. I have used them satisfactorily in two cases. They are made by Truax & Co.

DR. H. T. BYFORD exhibited a

CALCULUS FROM THE RIGHT URETER.

At the December meeting I exhibited the larger of these ureteral calculi, which is $1\frac{1}{4} \times \frac{1}{4} \times \frac{1}{4}$ inches. Its mate was passed March 6th and 7th, and is of about the same diameter, viz., $1\frac{1}{4}$ inches long, making both of them as they lie in the right ureter $3\frac{1}{4}$ inches.

The second stone was felt on several occasions in the ureter after the passage of the first. In February, I grasped it bimanually, without the aid of an anesthetic, and drew it down toward the trigone, endeavoring to coax it into the bladder. Although I stirred it seemingly half an inch, I thought it judicious, after an hour's trial, to give up the attempt. March 6th she was taken at 7 P.M. with cramps in the right iliac region, starting from the lumbar region, accompanied by chills, and vomiting of bile, and "empty straining." This attack ceased at 9 P.M. She rested well until 7 A.M., when she was taken with pain in the urethra and had a desire to evacuate the bladder. After half an hour's very painful straining, as she called it, the stone dropped into the vessel. Thus we had the passage of a stone through the lower inch of the ureter in two hours and through the urethra in half an hour, and just ten hours after its arrival in the bladder. What influence my attempt at delivery bimanually may have had I cannot say, although I think that it dislodged it from its bed. The lower end of the ureter is still twice the thickness of that on the opposite side.

DR. ETHERIDGE.—Do you think the water escaped down the side of this stone and came out?

DR. BYFORD.—Yes, sir. When the urine could no longer escape, the stone was forced out. On several occasions, urine accumulated behind the stone, but had always forced a passage beside it after a few hours of colicky pains. Her health has been perfectly good since.

DR. ETHERIDGE.—There is one alteration in these forceps which it seems to me if the doctor would make, would render them about perfect. Forceps of that length will, in a very fat subject, incroach upon the thigh of the opposite side very decidedly, and for that reason it would be necessary to have left- and right-hand forceps. For instance, suppose this was to go on the *left* Fallopian tube; you can see how the lower end would hit against the *right* thigh. If he would take this handle and curve it a little, so as to bring it, when *in situ*, straight out of the vagina, I think it would improve them very much. I had a woman under my care upon whom I used forceps two inches shorter than these for clamping the broad ligaments, but they were straight, and they made such a deep pressure upon each thigh that it almost destroyed the skin, which was blue and looked as though necrosis would certainly occur. These forceps being longer, it seems to me we would run a still greater risk unless the thighs were widely separated—a position which would be very uncomfortable to assume for two days.

DR. E. C. DUDLEY.—I have had some forceps made which I have used successfully three times in vaginal hysterectomy, and they are shaped in accordance with the suggestion of Dr. Etheridge, the handles being curved to one side in order to prevent them from striking the thigh opposite to the broad ligament in their grasp. The blades are about two or two and a half inches long. The forceps presented by Dr. Byford are open to the objection that the tooth projecting from the end of one blade over the end of the other must increase the difficulty of removal. Besides, this tooth, the object of which is to prevent the upper margin of the broad ligament from slipping out of the grasp, is hardly necessary, inasmuch as this accident is not likely to occur even with the ordinary forceps, if properly applied. It is a question whether the broad-ligament forceps should not have the grooved teeth parallel with the jaw, instead of at right angles to it, to prevent their slipping off. At least, the parallel arrangement might be observed to within a half inch of the end of the jaw, and throughout this half inch they might be transverse and a little deeper, in order to hold the margin of the ligament. I prefer for this operation that the shank of the forceps be much shorter, because when the handles are short several of them, arrested at the vulva, will hold the broad ligament well down towards the vagina, and thereby continuously prevent its retraction up into the peritoneal cavity, where it would necessarily be a source of danger, because it would draw up with it its necrosing extremity which is in the grasp of the instrument. I have never left the forceps on longer than seventy-two hours, and have sometimes taken them off in twenty-four hours. It might be well, however, to leave them on as long as they will stay, which would be until the sloughing tissue within their grasp comes off—an occurrence which would certainly be hastened by their pressure. Clearly, the sooner it comes off the better. Gangrenous tissue in connection with a wound must inevitably be a source of danger. The forceps, moreover, serve the purpose of drainage.

DR. BYFORD.—I have never had the trouble that Dr. Etheridge has had; but I do not know that I ever had them on an unusually fleshy patient. I have never had the forceps cross each other; they always lie parallel outside. I could not very well put another curve in this instrument without destroying the power of the blades. I have found no difficulty whatever while taking them off in my two cases.

DR. DUDLEY.—The next ones I have made I shall have the teeth run in the opposite direction, parallel with the blades.

DR. BYFORD.—I think it would be an improvement to have them run at least diagonally, because of the danger of their slipping off at the sides. As Truax & Co. have just sold the first lot, I shall order the change for the next. As to the length of the forceps, you must have a long handle for leverage; I prefer to have mine stick out from one to two inches from the vulva. It is easier to use the catheter and keep the parts clean, and I should dislike to have traction exerted by short handles, as that would imply pressure upon the external parts and pubic bones, which could not be tolerated for any length of time. Another objection to leaving them in the vagina too long is that they become corroded, and I think in a short time would catch and retain foul secretions. I prefer to take them off in forty-eight hours, and commence vaginal douches on the third or fourth day.

DR. HENRY T. BYFORD exhibited a

FIBRO-CYSTIC TUMOR OF THE UTERUS SUCCESSFULLY REMOVED BY
LAPARATOMY.

I have here a tumor which I think is interesting for several reasons. It is a fibro-cystic tumor of the uterus, and was about the size of a seven-months' pregnant uterus, of which the solid portion is not larger than the fist. I have the following notes:

Mrs. Bessie B., age 28; married; one child fifteen weeks old. Had a small tumor during her pregnancy, first felt over the right iliac region. Tumor felt in connection with the uterus after labor, getting apparently smaller during first month after labor, then growing rapidly. She suffered with a mild form of peritonitis after labor, with most pain in the region of the liver. Since then has been gradually improving in strength. Owing to its first appearance on the right side, its greater prominence to the right when I saw it, the evident fluidity of its contents, and the displacement of as much of the uterus as could be felt to the left, it was thought to be a multilocular ovarian cystoma with adhesions. Operation April 1st, 1889, at Woman's Hospital.

The chief item of interest in this specimen was the difficulty of the operation. I cut down upon the tumor and came immediately upon its wall. Expecting to get into the peritoneal cavity, I cut down to the symphysis and came on a little peritoneal pocket large enough to contain about half an ounce of fluid. I then went up beyond the umbilicus, but still could not get into the peritoneal cavity. I separated the tumor for quite a distance laterally, but could not determine whether I was between the tumor and the peritoneum or between the peritoneum and the abdominal walls; on one side I seemed to have a different layer of tissue from that on the other. Finally I plunged a trocar into the mass and evacuated about a quart of thin, slimy fluid. When this ceased flowing, I took out the trocar and lifted out with my hand two or three quarts of jelly-like substance. I pulled upon the walls and went on separating them from their beds. When I got to the intestines, I found no peritoneal cavity. They were adherent to the tumor and to each other at every point. What had been omentum apparently came off from its intestinal attachment, leaving spurting arteries on the surfaces. While I was at work, these two smaller cysts broke and smeared the whole field with their tarry fluid. The colon and sigmoid flexure bled profusely upon being separated from the mass. The vermiform appendix, which extended over to the median line, had to be removed. It is still adherent to the tumor and as large as the finger. The only trace of the broad ligament that I got was a little fold sending up, from each iliac fossa, large vessels. I ligated these folds and then enucleated the tumor out of the broad ligament, tying vessels everywhere, and finally got it loose from both sides. I made a stump of the uterus at

about its middle. There was left an enormous raw, oozing surface extending from the bottom of the pelvis almost to the ensiform cartilage and across almost the whole abdomen. The only way I could get the pelvis and crevices free from the small clots and debris was by pouring hot water into the cavity by the pitcherful. The foreign substance came out by the handful. I fixed the stump extra-peritoneally by Hegar's method. I put a drainage tube below in the cul-de-sac and above in the upper end of the incision. The temperature went up to 103° F. and gradually came down. Except that temperature, she did not have a bad symptom. The upper drainage tube came out in a few days; the other one is still discharging a little, but the patient feels perfectly well and has been wanting to get up for several days.

DR. DOERING.—How long ago was the operation?

DR. BYFORD.—Two weeks yesterday.

DR. C. T. PARKES.—I think Dr. Byford is to be congratulated upon the success of this very difficult operation. It was extremely difficult, and proves the fact that we should all remember that it is not what you take out of the abdominal cavity that causes danger to the patient; it is what is put in or left in, and the care used in washing it out and leaving it perfectly aseptic.

DR. E. C. DUDLEY.—Dr. Jaggard will probably remember a uterine myoma which weighed some thirty-five or forty pounds, at the removal of which he was present, five or six years ago. In that case, at least two square feet of surface were exposed in breaking up the adhesions and enucleating the tumor. The woman never suffered any bad consequences from the exposed surface. Large exposed surfaces in the peritoneal cavity, if clean, are not particularly dangerous.

DR. E. C. DUDLEY read the following paper, entitled

A UTERINE MYOMA REMOVED BY A COMBINED VAGINAL AND ABDOMINAL OPERATION—CAPSULE STITCHED INTO THE ABDOMINAL WOUND.

The solid portion of this myoma weighed six pounds. The tumor was taken from a multipara, 38 years of age, referred to me by Dr. Vanderhoff. She was extremely anemic and weak, having been exsanguined from long-continued and frequent uterine hemorrhages. The tumor was ovoid and extended from a point near the umbilicus to the vulva, filling the pelvis minor so as to prevent an examination from revealing its relations to the uterus. The fact that the tumor presented at the vulva decided me, in accordance with the old rule, to attack it through the vagina, knowing that if it became impossible to enucleate the entire tumor in this way the remainder might be removed through the abdominal cavity.

The patient being in Sims' position and the parts exposed by Sims' speculum, the capsule was incised and with some difficulty peeled back, and piece after piece of the tumor was cut off with the scissors, all the time making traction with vulsellum forceps.

Presently a cavity in the tumor was entered which contained something like a quart of purulent fluid. I continued the enucleation and removal of the tumor piece by piece for more than an hour, until about one-half of it had been taken away. I could then make out its relations to the uterus. It had sprung from the right wall of the cervix, close to the vagina, and had developed both upward and downward, without involving to any great extent the uterine wall.

It was now apparent that further enucleation in this manner would consume more time than the patient could endure, and might be impossible without rupture of the capsule into the peritoneal cavity and all of the dangers consequent upon such an accident. Accordingly I placed the patient upon the back and opened the abdomen by an incision perhaps five inches in length. The patient was so weak as to necessitate the most rapid manipulation. The abdominal portion of the tumor was found to be free from adhesions. I incised the capsule parallel to the abdominal incision, and with considerable difficulty, in about ten minutes, enucleated it. The empty capsule was then intact with the exception of its two openings, below in the vagina and above in the abdominal cavity. The uterus was of about normal size. My first impulse was to remove the capsule together with the uterus, in order to secure absolute hemostasis. This might have been done by means of the lock forceps in the vagina, as in an ordinary vaginal hysterectomy. Instead, however, I stitched up the abdominal opening of the capsule, including a wide margin of peritoneum, with interrupted catgut sutures, leaving an opening in the summit of the capsule about an inch long. This was stitched into the central part of the abdominal wound, and the remainder of the wound was closed in the usual way, except that the sutures closing the abdominal wound were passed also through the seam in the capsule. The capsule was then irrigated with hot water, which readily passed out through the vagina. A glass drainage tube was introduced through the abdominal wound into the capsule, and antiseptic dressings applied over the abdomen and vulva. Very little blood was lost in the operation.

The patient did remarkably well until about the fourth day, when drainage at the vulva ceased from obliteration of that end of the capsule. Temperature rose to 103.5°; no chill. Capsule irrigated with corrosive sublimate solution, 1:10,000. Temperature remained high. I then forced a flexible sound from above downward through the capsule into the vagina, breaking up the adhesions between the walls of the capsule. The sound was then withdrawn with a thread which had been tightly tied around its end. A large, perforated rubber drainage tube was now drawn down by means of this thread through the abdominal wound into the vagina, and perfect drainage was thereby secured. Temperature

has been much lower, quite within bounds. It is now two weeks since the operation, and the indications are all most favorable.¹

Whenever a myoma can be peeled out of the capsule, the latter may be repaired by means of interrupted catgut sutures and stitched into the wound, as above described. If its inner surface bleeds considerably, an iodoform gauze packing after the method of Mikulicz would be a perfect hemostatic.² In this case, a long rubber drainage tube reaching to the vagina should have been used instead of the glass tube, to begin with.

A second thought relative to the management of the capsule in such cases leads me to regret that I did not simply invert the capsule into the vagina and hold it there by means of lock forceps, precisely as the broad ligaments are held after severing the uterus in vaginal hysterectomy.

Occasionally the operator will encounter a case in which he has enucleated a myoma on the abdominal side, the myoma having developed so far down towards the vagina as to permit an opening to be made into the vagina through which the capsule could be inverted.

DR. ETHERIDGE.—Mr. President, I do not see the objection, in the doctor's case, if there was no attachment and the capsule was flexible, of removing it entirely through the abdominal cavity. It seems to me that he has run a great risk in getting it out piecemeal from below, knowing nothing about when he was going to cut across a large vessel. In regard to the possibility of hemorrhage, it seems to me the operation is unjustifiably dangerous. When we have a movable tumor, a very much better way of proceeding is to remove tumor, capsule, and all, and then close the abdominal wound and make free drainage through the vagina, and wash it out as often as necessary. It seems to me Dr. Byford's suggestion would be better than the one Dr. Dudley speaks of, for this reason: In turning the capsule down and fastening it with forceps beneath, there is a point at which this thin tissue turned over upon itself will strangle the blood-vessels, so that no circulation can take place through the part of the capsule that is inverted, consequently all that is inverted will stand a good chance of necrosing and being a source of sepsis. I listened very carefully for a description of the advantages of this method over the complete removal through the abdomen, and was disappointed in not hearing it.

DR. BYFORD.—I had the pleasure of witnessing this operation, and it proved a very instructive one to me. The method of operating both ways is not entirely new. There is an operation very similar to this one, described by Dr. Zweifel in a recent number of the *Centralblatt für Gynäkologie*. In a case like this, I should prefer to excise as much of the loose capsule as possible, stitch the peritoneal surfaces beyond, and draw the edges down to a vaginal opening below. A drainage tube could be kept in from

¹ Three weeks after the operation the patient was securely convalescent.

² Dr. Dudley has since used the iodoform gauze packing of Mikulicz in another similar case.

the vagina. As to inverting the capsule, it would have been possible in Dr. Dudley's case, I think, but whether so as not to leave pus pockets on either side I do not know. The method mentioned of inverting the cervix in fibroid tumors has, I believe, been discarded as unfeasible; the cervix is either too small, or, if enlarged, is too hard to be dilated sufficiently. As to fibroid tumors being reproduced from the capsule, I think it is impossible, because the capsule shrinks up, suppurates, or undergoes necrosis.

DR. E. C. DUDLEY.—If Dr. Etheridge had seen this operation in which the tumor extended down to the vulva, I think he would have been impressed with the fact that this particular tumor could not possibly have been enucleated on the abdominal side without exposing the patient to an unnecessarily long and dangerous operation. The enucleation might have extended further than the finger could reach. The previous removal of a large part of the tumor through the vagina made it possible to remove the remainder through the abdomen very rapidly. I do not think inverting the capsule and drawing it down into the vagina would cause sloughing, if one were careful not to make that amount of traction which would cut off circulation and thereby produce sloughing.

Dr. Byford's suggestion as to the treatment of the capsule differs from mine rather in detail than in principle.

TRANSACTIONS OF THE OBSTETRICAL AND GYNECOLOGICAL SOCIETY OF WASHINGTON.

Stated Meeting, April 5th, 1889.

DR. JOSEPH TABER JOHNSON, *President, in the Chair.*

DR. G. WYTHE COOK read a paper entitled

DO MATERNAL MENTAL IMPRESSIONS AFFECT THE FETUS IN UTERO?¹

DR. A. F. A. KING, in opening the discussion, said: The subject introduced by Dr. Cook is one to which I have never given any serious reflection, and when called upon some days ago to open this discussion, and after reading Dr. Cook's paper, I felt convinced that my views were so nearly like those of Dr. C. that there would be very little disagreement between us. As, however, I suppose it is my duty, for the sake of argument, to attack Dr. Cook's position, I shall try to do so, and also add what I can on his side of the question. I have generally considered the whole matter a myth, and that the remarkable cases recorded were simply coincidences. But on reading over, within the last twenty-four hours, the paper of Dr. Fordyce Barker and its discussion by Drs. Busey, Goodell, and others, in the *Trans. of the Am. Gynecol. Soc.*

¹ See original article, page 981

for 1886, the accumulated testimony there presented cannot easily be ignored. Speaking in a general way, I believe it is admitted that the development of an embryo is governed by *its own nervous system*, just as the functions and structures are governed in mature organisms. The development of a fetus *begins* by the formation of a rudimentary brain and spinal cord at the site of the "primitive trace"; and, as it proceeds, the progressive and harmonious evolution of other organs is determined and governed by this central nervous system. Even the lowest kinds of organisms—the monads and ameba—are probably composed of living protoplasm nearly akin to nerve matter, and of which perhaps the nucleus is the nervous centre. In some of these lower organisms containing several nuclei, when the body is cut in pieces, every separate piece, *if it happen to contain a nucleus*, will redevelop into a perfect individual; if it contain no nucleus, the attempt at redevelopment begins, but only produces a deformed or imperfect individual which soon dies. So, again, anatomists have demonstrated that deformities of the human fetus are attended with defective nerve supply to the deformed part; the harmonious government and regulation of its development is, therefore, wanting. It is difficult to appreciate that the functions of nerve, in a rudimentary form, should be possessed by the protoplasm of a monad, but the recognition of this fact becomes more easy when we remember, as recent physiologists tell us, that the gray matter of our own adult nervous centres, notwithstanding its exalted function, is nevertheless simple protoplasm; for the epithelial cells of the epiblast, when folded in to form the spinal cord, retrogress from the dignity of epithelium back again to rudimentary protoplasm, and so remain during life. It is, therefore, the central nervous system that governs development, alike in the lowest as in the highest organisms, and in all stages of embryonic evolution. Such a method of government in the human fetus would seem to exclude the agency of maternal impressions.

Resemblances of human beings to animals or birds, and without any extraordinary "maternal impression" to account for them, are, I think, not unusual, should they be looked for. I remember years ago being enamored of a young lady, as were also several other young men, all of whom, when I pointed it out to them, recognized her unmistakable resemblance to a monkey. Whether her mother had been "impressed" during pregnancy by one of these animals I do not know; but if there *had* been such a history, the resemblance would no doubt have been ascribed to it. On the other hand, it must be admitted that these *general* resemblances are very different from the *special* deformations so frequently recorded; and yet the same law probably determines all alike.

In support of the "maternal impression" doctrine, it might be affirmed that a child is like its father, and what has more deeply impressed the mind and imagination of the mother, both before and during pregnancy, than the form, size, complexion, countenance, and other qualities of the man she loves and has made her husband? Moreover, she has imbibed the tradition, confirmed by numerous instances within the range of her own experience, that children are frequently born like their fathers, and she fully believes in it and expects that her child will resemble her husband, and so, when it does come, every one recognizes that it is a veritable "chip of the old block." Now, if there be any real truth in this doctrine, it must be owing to some natural law that is always

in operation, hence the *general* paternal resemblances of so common occurrence may be an evidence of the same law by which *extraordinary* deformities arise from alleged extraordinary maternal impressions.

Dr. Cook and his colleagues will not accept this doctrine of maternal impressions because they cannot explain or understand it. They believe paternal resemblances are conveyed to the ovum by the sperm cell. But is this doctrine any *more* easily explicable and comprehensible? Can they explain and understand how an insignificant little ciliated sperm cell, by penetrating the vitelline membrane of an ovule, can convey to it, during its future life, a blond complexion, a talent for music, or the brain of a philosopher? If we are to deny the existence of that which we cannot comprehend, their explanation of spermatoc impression must share the same fate as the maternal-impression doctrine.

It is an interesting question how far the mother's mind may determine the sex of the embryo—that is, of course, should there be any truth at all in maternal impressions as here considered. The ovum is first asexual, then bisexual, and finally becomes either male or female. The mother's mind, imagination, and desires dwell, it may be supposed, on one or other sex unequally; should this determine the sex of the infant, it might be added that once, perhaps, in ten million cases her impressions are equally and exactly balanced: then follows the prodigy of a hermaphrodite. But, for myself, I cannot admit this doctrine.

This discussion suggests the consideration of other allied topics, as, for example, the ante-natal education of the fetus in utero by accidental physical conditions. Is it not within the range of possibility that a child who in after-life develops remarkable musical talent may have acquired its love of music and its appreciation of harmonious sounds by having its ear during pregnancy in close proximity to the placenta, where it could, as it were, auscultate the musical *bruit* of the placental circulation? We all of us love to repeat many of the sensible impressions received in youth and childhood, and the farther back our memory can extend the more pleasing do those repetitions become. But if musical tones during maturity are repeating impressions made on the ear while in utero, the instinctive delight in unconsciously recalling reminiscences so extremely remote might well be a factor in explaining that *love* of music which always accompanies the *talent* for its execution.

Returning, however, from this digression to Dr. Cook's paper, the doctor and his followers state that there is no direct nervous or vascular connection between mother and child—no nerve fibres are found traversing the umbilical cord. This is quite true. Yet what we have not found to-day the microscopist may discover to-morrow. It is not impossible, for aught we know to the contrary, that the protoplasmic matter in the navel string, constituting Wharton's jelly, may be a conductor of nervous impressions. There may be more things between child and mother than are "dreamed of in our philosophy."

If it be true that maternal impressions influence the fetus in the manner we are here considering, there must be, as I have said, some *law* always in operation governing this relationship between mother and child. Now, if there really be any such law, its execution ought to exhibit some element of *utility*, some beneficent purpose, some adaptation, or attempted adaptation, of the child

to its environment after birth, or the like. Can any such purpose or utility be discovered in cases where this law has been called into play? We answer, no. And yet in some of the cases, though not in others, just a possible glimmering of utility may be suggested. For example, among the cases cited during the discussion on Dr. Barker's paper before the American Gynecological Society in 1886 were the following: A slave cuts off his great toe in the presence of his pregnant mistress: the child was born with one great toe missing. A pregnant woman is horrified by seeing the tine of a pitchfork run through the right hand of one of her children: her next child is born with "the right hand *entirely absent*." Another pregnant woman has an earring forcibly torn through the lobe of her ear: her child is born with a similar slit in the lobe of the same ear. Now, the glimmering suggestion of utility in these cases is this: If, in the environment of the parent, axes are to cut off great toes, pitchforks to be plunged through the hand, and slits to be torn in the ears, adaptation to these traumatic elements of the environment would be secured to the child by the respective mutilations being already accomplished congenitally. While this idea presents a very forced as well as unjust and unexplainable application of the principle of congenital adaptation of progeny to parental environment, it barely suggests that if the cases are not mere coincidences, some such law, or principle of utility, must underlie them.

Finally, to recur once more to the suggested paternal resemblances being due to the husband's impressions upon the wife, I may add that in those instances where the children begotten by a second husband resemble those of the first, it may still be possible that the recollections of a first husband—of the woman's first love—yet remain, and even outweigh those of the living one, who, perchance, she may love less or not at all. On the other hand, this same phenomenon is observed among animals, in whom the amatory emotion, it may be presumed, is not so potent or lasting.

DR. H. L. E. JOHNSON thought this a very practical question from a business point of view. Patients frequently inquire of physicians whether there is any danger of their unborn children being deformed by sights that they have seen. He thought we should be able to state positively whether or not such sights were likely to produce deformities by impressing the mother. As a rule, we hedge or treat the question lightly. He had seen a great many confinements and several deformities; in some the histories were well laid out, but in a few there would seem to be some connection between effect and cause. One woman, when about two months pregnant, had trodden on a dead animal, and was suddenly horrified at seeing its eyes pop out. She soon consulted him, and was told not to be apprehensive; nevertheless, when the child was born its eyes were prominent. In other cases, it did not follow that there would be any effect on the child in utero. He did not think that mental impressions had anything to do with such deformities. He believed with Dr. King that the ovum had a separate nervous system and that it was injured in some inexplicable manner, and deformity resulted. By tracing the analogy in plants, we see deformities which we attribute to defective seed. If medicines are administered to destroy the ovum, and only partially succeed, may they not injure the nervous system of that ovum to such an extent as to interrupt its perfect development? He then thought the secret of these deformities should be sought

in that line. If a woman is pregnant six months when she sees a cripple, and her child is born with crooked feet, it cannot be ascribed to any mental impression, as the feet were formed long before the impression. In Dr. King's example of the resemblance of the child to its father, he did not believe mental impression had anything to do with it, but that the nerve matter of the ovum regulated it.

DR. FRY.—This question cannot be easily solved by dogmatic assertions that it is nothing more than a myth. We should trace these resemblances and record them, and perhaps in the future some one may solve the problem. He had always regarded maternal impressions as something more than superstitions. If we can accept only what we can explain, then how are we to account for the transmission of disease, the characters of children, the paternal attributes, etc.? The surroundings of the mother and the nervous impressions undoubtedly affect the fetus in utero. During the siege of Paris, pregnant women were terrified, and as a result many feeble-minded children were born. He had seen one or two instances which confirmed his belief in maternal impressions. A young primipara gave birth to a child having spina bifida. In her early pregnancy, she had visited a relative whose child was similarly affected; she had never let it prey upon her mind, but nevertheless her child was similarly affected. She did not seem anxious about it at its birth, but was told of it the next day. It lived three weeks. Last summer he delivered another child with spina bifida but without any such history; during her early pregnancy she had seen a great many deformities in the mining regions of Pennsylvania. This child still lives.

DR. J. FORD THOMPSON saw more deformities than the majority of the members, and had been interested in this question for years, but had failed to make anything out of it; consequently he is an unbeliever and doubts the existence of a single case where there is a direct relation between effect and cause. Take, for instance, the most common deformity, and how many mothers see it at a time when it could affect their unborn children? How few women when pregnant see harelip and cleft palate, and yet they are common deformities! In these, we must look for a physiological explanation, which is a defect in the line of union and nowhere else. It is an arrest of development of the component parts. The lip has three points of development, which may be arrested on one or both sides, and consequently a single or double harelip, either deep or superficial, may result. He had not seen any such cases as those attributed to maternal impressions. In spina bifida, the development is completed at an early period, before the impression is said to have been made. The impression in such deformities occurs too late to affect the fetus. He frequently saw cases of imperforate anus. How many mothers see imperforate anus? He operated on all possible deformities of the genitals of the infant. How many mothers see similar deformities? He ventured to assert that none of them had seen them. Many may have seen such a common deformity as clubfoot. In such cases, the mental impression must have paralyzed the muscles, as they are all present. It is a singular impression to occur so late and only affect two or three muscles. Many of these impressions are simply discolorations which are not due to arrest of development. It was beyond his comprehension how intelligent men can accept the doctrine of maternal impressions.

DR. SMITH.—Will Dr. Thompson explain the cause of the arrest of development?

DR. THOMPSON could not explain it, and no one has found out the cause of such freaks of nature; but it has not been proved that it is the result of maternal impressions. Dr. Smith would not admit that every harelip was due to a maternal impression, but still it is an arrest of development. He thought heredity undoubtedly influenced such cases, as he had seen several like deformities in the same family, and also different generations of the same family, with harelip and cleft palate passing through three generations. In the impression made by the ass on the mare, which governed her subsequent foals to such an extent that they all bore evidences of the corrupt influences of the ass—even if she only took the ass once and thoroughbred horses thereafter—he would attribute it to the effect of the ass' sperm cell upon the uterus of the mare. The quality exists in the sperm or germ cell. How else could we explain excessive development, as supernumerary fingers and toes? The maternal impression is almost always said to have occurred at a time when it would be impossible to affect the development. He thought such cases coincidences. We should not accept a doctrine on such meagre proof, but should consult about it.

DR. SMITH.—Dr. Thompson's explanation does not explain. When he says that the deformity is due to an arrest of development, he should be able to explain the cause of such arrest. Even if we cannot explain how maternal impressions affect the fetus, the theory is better than none at all. He had recently read of a case where a pregnant woman had seen a bad case of harelip and was apprehensive about her unborn child, and it was deformed; in her second and third pregnancies, she worried, and her children were also deformed; in the fourth, she consulted a physician, who told her that the child she was then carrying would not be deformed, and it was perfect. It would thus appear that the effect of the positive statement made by the doctor on the mother's mind prevented deformity in the last child. A pregnant woman saw a window fall on her child and released him: her child was born with a weak mind.

DR. THOMPSON.—We should look upon these things logically. The falling of the window on the child had nothing to do with the mind of the fetus in utero. This does not explain anything. In time of war, heroes are born. In our war there were many harassing scenes, and yet how few deformed children were born at that time! Occasionally a wonderful case is reported at some cross-roads; but there is nothing as a matter of fact or science to attribute it to any mental impression on the mother. Arrest of development is beyond our comprehension, but it had nothing to do with maternal impressions, which he thought mere coincidences.

DR. SMITH.—If a dozen men were found with fractured skulls, and the policeman who found them could only account for the cause of injury in one, would Dr. Thompson refuse to accept the explanation of one case because it did not apply to the others? Even if harelip only makes an impression on one pregnant woman in fifty, is it not a better explanation to attribute this to a mental impression than to say it is an arrest of development?

DR. FRY.—Dr. Thompson claims that many mothers have never seen harelip. No one claims that every case of deformity is traceable to maternal impression. Dr. T.'s line of argument is: Every maternal impression should produce a fetal deformity; as

there are deformities which cannot be traced to such sources, therefore there is no such thing as maternal impressions producing fetal deformities. Persons may be exposed to contagious diseases six times and not take them, but we cannot conclude that they are not contagious, because they might contract them upon the seventh exposure. The same line of reasoning should be pursued in dealing with maternal impressions.

DR. H. L. E. JOHNSON.—The conditions during the war, as fright, privations, etc., may affect pregnant women and interrupt development of the fetus in utero. The analogy is the same in the lower order of creation. We seldom find deformed animals, although they are frequently frightened and kicked about nigh unto death. He thought the child was formed independently of the mother, except as to its sustenance.

DR. KING, in reply to Dr. Thompson's remark that after union of the normal parts of a lip in utero separation and the production of congenital harelip was "absolutely impossible," said that the tissues of a premature fetus were not so stable or unlikely to change as those of a mature one; and that the line of recent union might, under certain conditions—as, for example, the withdrawal or suspension of nervous influence to the part—actually separate again and produce harelip, just as recently united wounds in the adult would sometimes do.

With regard to the case of imperforate anus, in which the mother had never *seen* one before observing it in her own child, Dr. King said that there was no reason why the maternal impressions should always be *visual* ones. If there is truth at all in the doctrine, the impression might be potent if it were made upon some other sense than that of vision. This woman might have been alarmed; for example, during her pregnancy by trying, perhaps for the first time, to give herself an enema and failing to introduce the syringe; or she may have been painfully impressed with the same failure in trying to give an enema to her own or some other woman's infant. Dr. Thompson gives no such history, but his testimony does not positively exclude it. So other imaginable methods by which forcible impressions are made upon mothers could be easily added, even though no visual one were acknowledged.

DR. THOMPSON had stated scientific facts and was not theorizing. When the line of union is completed, the retrograde process is impossible. With regard to the fractured skulls he would seek a rational explanation.

DR. H. L. E. JOHNSON.—There are no nerve filaments in the umbilical cord; the fetus is separated from its mother; it has its own nervous system, and it floats in a fluid for its protection, so that a mental impression of the mother could not affect its development.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI

Meeting of March 14th, 1889.

The President, GEO. E. JONES, M.D., in the Chair.

The President-elect, in assuming the chair, delivered his inaugural address, in which he earnestly pleaded for more original work during the coming session, and exhorted the members to pay special attention to the examination of specimens by the microscope.

DR. W. H. WENNING then read a paper on

SUPPURATIVE MASTITIS FOLLOWED BY SEPTICEMIA AND METASTATIC PAROTITIS.¹

DR. G. S. MITCHELL said that whilst mastitis leading to a superficial abscess is comparatively common, the form of abscess described by the essayist, with its resulting complication, is unusual. He thought in many instances the evil could be prevented, especially if due to fissured nipples. In the speaker's experience, mastitis followed usually upon some complication at the time of delivery. Sometimes it occurs in strumous patients.

He did not know if it was due to the presence of a germ or not, but he was not willing to eliminate cold as a cause in a gland performing its physiological function. Cold is followed by congestion, which is the first step in mastitis; if this cause continues, suppuration will follow sooner or later. He did not know if the accumulation of milk will cause it.

When suppuration has occurred, the treatment is self-evident. The fact that an abscess usually occurs in the most dependent portion of the breast shows us how to support the organ. When pus is detected, the best thing to do is to give it exit. Suppuration may be facilitated by the use of poultices, etc. Where there is a tendency to injury of the nipple, the child should either not nurse at all or the nipple should be protected by a shield. Improper manipulation of the breast should be strictly prohibited. Mastitis is often induced by meddling measures on the part of the nurse or friends to prevent caking.

DR. ILLOWY thought two points in the paper were of especial interest. First, the statement that mastitis could be prevented with absolute certainty by the application of pressure. He believed that pressure could do no good unless it were resorted to at the very outset of the disease, in the stage of congestion; later on it aggravates the trouble. We have a very familiar illustration of this in whitlow. If, at the very outset of the malady, in the first hours, a strip of adhesive plaster be wrapped around the affected finger, the disease will be jugulated; after the second day, this treatment does no good.

¹ See original article, page 942.

A second point made by the essayist is the influence of bacteria, by which he seeks to explain the occurrence of the parotitis. He believed such an assumption not well founded, from the shortness of time occupied in the transfer of the inflammation from one point to another. The rapidity with which such transfer occurs is well illustrated in the following case reported in *La Tribune Médicale* some years ago: A French military surgeon had a patient in the hospital afflicted with orchitis; suddenly one evening the patient was seized with rigors, high fever, etc., and the next morning it was found that the orchitis had subsided and a marked parotitis taken its place. He was put upon jaborandi, profuse salivation produced, and by evening the parotid inflammation had disappeared—but the orchitis returned.

Now, in this case there can certainly be no question of septic infection producing the parotitis, as its rapid subsidence is sufficient proof contra.

The question naturally arises, Might not the inflammatory process have been conveyed in a similar manner in the case reported here this evening? Metastasis, as formerly held, is now discarded, but the speaker thought that the bacteria doctrine did not explain these occurrences with any more clearness.

DR. STANTON said that in the main he agreed with the essayist. All of the cases the speaker saw were due to some lesion of the nipple; he could not recall a single case where it was not due to this cause. He was also of the opinion that many cases were caused by meddlesome interference of the nurse. He had succeeded in incurring the ill-will of many nurses on account of his strict injunctions as regards the care of the breast. The nipple should be protected, but it is hard to get a child to nurse through a nipple shield. The trouble is frequently caused by permitting the child to nurse too often or too long. When there is engorgement, it is better to let the child nurse occasionally, but the nipple should always be cleansed and dried. The use of a breast pump will often cause the formation of pus; suppuration can usually be prevented by support and rest. The speaker did not understand the essayist to say, as understood by one of the speakers, that compression should be resorted to after suppuration had been well established. The speaker was of the opinion that some sort of moderate compression should be resorted to even after pus has formed, for it will give free exit to it, as it is secreted after the abscess has been opened.

DR. WRIGHT remarked that he agreed with most of the speakers as regards the influence of sore nipples in causing inflammation of the breast. He thought also that in a larger proportion of cases it was due to blocking-up of the tubes, improper handling of the breast by the nurse, pressure of the clothes, etc., finally causing suppuration. The most singular feature to him was the bacterial element in the causation, which was said to occur in two ways: first, through the abraded nipple; and, secondly, through the lactiferous tubes. He could not comprehend the latter mode of invading the breast. Dr. Illovy had denounced compression when inflammation was already established. The speaker was of the opinion that, if the breast be thoroughly bandaged before suppuration has been established, the formation of pus may be prevented, even if the inflammation have already run to a high degree. He never saw a case as bad as the essayist's.

DR. ZINKE thought the possibility of germs entering the breast

through the excoriated nipple or through lactiferous ducts could not be denied, but he was inclined to believe that it would occur oftener through the fissured nipple than the lactiferous tubes. Assuming, however, this to be true, the pressure treatment would be wrong, because it would drive the bacteria into the system. He did not believe, however, this mode of invasion to be true. In his experience, mastitis occurred most frequently by occlusion of the milk ducts, subsequent inflammation, and finally suppuration. From this standpoint, pressure will do good. He succeeded thus in aborting inflammation of the breast, just as we do in the testicle. In addition to that, he used the belladonna plaster as a strapping. This ought to be done when the redness is only slight, both in the glandular and the subglandular varieties. In the early stage, ice application would often do good. He thought also that we should not be quite so severe on nurses or friends for rubbing the breast with oil or some other unctuous substance. In the earlier stages, these frictions may do some good, but not after pus has formed. An important question arises: In the event of the formation of an abscess, when should the breast be lanced? Here the rule, "the earlier the better," does not hold good, because, if the abscess be opened too soon, an additional number of lobes may be cut in which pus may form. Hence we should wait until the abscess points under the skin, when it should be opened, a tent introduced into the opening, the breast strapped, and the abscess allowed to discharge at intervals. As far as the metastasis was concerned, the speaker did not look upon it as something so remarkable; we know the sympathy between a disorder of the stomach and a headache. Parotitis is not unusual in septicemia.

DR. WENNING, in concluding the discussion, remarked that, although not in the order of the parts of the paper, he would reply to the criticisms offered to various points in the order of the speakers. In the first place, he would not deny the influence of cold or exposure in the causation of mastitis, but regarded it only as of secondary importance—an exciting cause. It is true that the influence of cold in many diseases is undeniable, but it must be our desire to arrive at the entity of disease. Cold may predispose to the development of inflammatory changes, but certainly something more is necessary to produce suppuration. Knowing, then, the great frequency of sore nipples as a precursor of mastitis, admitted by all authorities, what is more natural to assume than that these minute breaks of the surface afford a ready mode of entrance to the bacteria? It is not even necessary to regard the openings of the milk ducts as another avenue of entrance to these micro-organisms, because the fissures may be so minute as to escape detection or cause little suffering. It is said that erysipelas is always caused by the poison entering some minute break of the skin, and that the idiopathic form, therefore, does not exist, although we may not always be able to detect the minute break in the skin, the nipple being so much more exposed to injury and anatomically so constructed as to be easily fissured. This explanation is of greater force in this instance.

Another gentleman alluded to the sympathy of the testicle with the parotid gland in affections of either of these organs, and cited the experience of a French military surgeon, who found the parotitis and orchitis yielding respectively to treatment, but with the reappearance of the complication. The speaker would reply that

Trousseau mentions two just such instances, but it does not follow that because these were not instances of true metastasis the case reported was not metastatic. Here there were all of the clinical symptoms of suppuration followed by septicemia, finally culminating in a metastatic parotitis. If there be any such thing as metastasis, the case in question was a lucid example of it. It is much easier to explain the occurrence of metastasis by the absorption of the poison in the form of germs, than the relationship between ordinary mumps and orchitis.

The same gentleman also misunderstood the essayist when he said that pressure would prevent mastitis with an absolute certainty. The essayist did not claim such an extreme view, but was sure that many cases of mammary engorgement could be thus relieved and prevented from becoming the predisposing cause of a mastitis. A distinction must be made between simple engorgement and inflammation. The former may become the first stage of the inflammatory process, and favor the development of bacteria, although the entrance of a microbe must be, in the light of recent discoveries, a *sine qua non*, without which suppuration will not result. Both Billroth and Winckel, our most recent authorities on the subject, deny the simple engorgement or milk-stasis as a prime factor in the etiology of mastitis. It stands to reason, however, that compression must be resorted to early to be effective in preventing mastitis. After the inflammation has once become established, and especially if suppuration has occurred, compression is of no avail. Yet moderate pressure, simply intended as a measure of *support* to the affected breast, as already mentioned by Dr. Stanton, is of great service even at this time in expediting the discharge after the abscess has been opened. Compression at this stage will not "shut in" the bacteria, as expressed by one of the speakers, but hasten their exit.

In conclusion, the speaker must criticise one of the last speakers, who would not open a parenchymatous abscess of the breast until it is ready to break under the skin. This will answer for a subcutaneous abscess, but where one lobe of the gland has become the seat of suppuration it ought to be opened as early as possible. A small aspirator needle may be used in cases of doubtful diagnosis, followed by a free incision if pus be found, otherwise a number of other lobes may become affected long before there is any upward or outward pointing of the original abscess under the skin. For the same reason, the treatment for the glandular and subglandular varieties must not be confounded, as was done by the same gentleman. Whilst compression is of service in the early stage of parenchymatous mastitis, in retromammary abscess the breast ought to be supported—not compressed against, but lifted away from, the thorax, so that the pus may be evacuated between the gland and the wall of the chest.

Meeting of April 17th, 1889.

The President, GEO. E. JONES, M.D., in the Chair.

DR. THOS. P. WHITE read the following paper on

ELECTRICITY IN GYNECOLOGY.

My intention in introducing this subject to-night is rather to give a résumé of electrical treatment in gynecology than to add

my own experience to the already long list, and to elicit the opinions of my fellow-members, in order, if possible, to separate the certain from the doubtful, and to decide a course of treatment upon which we can rely in confidence.

Electricity is nothing new in therapeutics. With each new discovery, franklinism, faradism, and galvanism, electricity for a time held sway as a panacea of all ills; but even only five years ago it was gradually becoming a thing of the past, when a new Richmond, in the person of our distinguished colleague and honorary Fellow, Dr. George Apostoli, entered the field, and, after many experiments, placed electricity on a scientific basis, and astonished the profession with the success he claimed for his new treatment.

His method, as is sometimes wrongfully supposed, does not consist in any new discovery either in electricity or its mode of application, but simply in systematizing the technique, regulating or, if I may use the expression, weighing the intensity used, and in pushing the limit far beyond anything that had ever been attempted.

In order to do this, it was absolutely necessary to overcome the intense burning and blistering produced by such a current, to do which he invented his potter's-clay electrode. At first it was rejected; then, tried by different physicians, pronounced a failure: even the interpolar action was denied. But Dr. Apostoli continued to publish his cases, and, in a very meritorious paper before the British Medical Association in August, 1888, bravely defended his stand and refuted the charges against his method.

The consequence is that now once again electricity is rapidly becoming a panacea for all ailments to which man is heir.

For a stationary battery, in my opinion, there is nothing equal to the open-circuit cell of the Leclanché pattern—that is, the porous cup. In my own work I have been using an imitation Leclanché, made by the National Galvanic Company of this city, which I find very satisfactory, on account of its diminished internal resistance; the current is powerful and uniform, does not become easily polarized, and recuperates readily when run down.

They are, of course, coupled in series, thereby increasing the electro-motor force, while the intensity remains the same.

There is a tendency now to do away entirely with the expensive switchboard, coupling all the cells, and having only two binding posts, a current controller or rheostat, and milliampère-meter. The work by this arrangement is equally as good and certain, the only objection being the using of all the cells with each application. With the same arrangement the Edison light current has also been used.

It is often stated that this will open a large field for quackery, and that an electrician should be the one to administer the current.

In these statements I can in no way concur. In the first place, more than in any other form of treatment is a correct diagnosis necessary to success; secondly, a knowledge is required of what should be accomplished by the current, and the intensity necessary to produce this desired effect, neither of which can be successfully accomplished by the quack or electrician; that both can and will sometimes by chance succeed is not to be denied, but equally as often will they do harm by the injudicious use of high intensities.

Scientists are gradually adopting the theory that electricity, like heat and light, is simply a form of activity in matter. In consequence, electrical current in reality is a misnomer; but, as these terms are better understood and more easily comprehended in the present state of our knowledge, I continue to use the old nomenclature.

Unfortunately we have a superabundance of terms, and, with the permission of the Society, I will rapidly review the fundamental principles of electricity.

Quality, tension, electro-motor force, is the power or push to overcome resistance. The unit of measure is the volt; it is in fact the primary cause of the current, and is exactly the same whether the cell is the size of a thimble or as big as a barrel.

Intensity is quantity of current, and the larger the elements the more electricity there is generated. A unit is the ampère; each Leclanché cell generates about 1,500 milliamperes.

All metals and substances offer a certain resistance to the passage of electricity, and this resistance is measured in ohms. One ohm is the resistance offered by a column of mercury 106 cm. long by 1 mm. in thickness. The longer the current the more resistance, and the larger the conductor the less resistance; thus the resistance of mercury 2 mm. by 212 cm. is equal to that of 1 mm. by 106 cm. Ohm's law is: the voltage is equal to the product of the intensity by the resistance.

It is perhaps sometimes desirable to know the resistance of the person being operated upon. This is very easily calculated: the voltage being known, divide it by the intensity as shown by the milliamperè-meter.

I would like here to call the attention of my colleagues to a peculiarity of electricity, and upon which most works on the subject are misleading; that is the diffusibility of electricity throughout the tissues. Some even give drawings showing how it disperses from one electrode to the other, whereas in reality electricity invariably takes the course of the least resistance. All things being equal, the shortest is the least; but in medicine, when we come to fibrous tumors, exudations, old inflammatory deposits, great care must be taken that the current passes through the part treated, and not entirely around, which certainly will be the case if the resistance the long way around is less than directly through the

dense substance under treatment. Of course, in such a case, treatment fails, and to the manipulator electricity is at fault. This I firmly believe is one of the main reasons why there is such a diversity of opinion: some succeed and some do not in parallel cases. That the current will pass through a dense fibrous mass as readily as through soft muscular tissue is entirely out of the question; for this reason galvano-puncture is often absolutely essential to success.

Polar Action.—The action of electricity is, according to location, either polar or interpolar.

The polar action of the two poles is entirely different; that of the positive being hemostatic, that of the negative just the opposite. The effect varies, according to the intensity of current and size of electrode, from a mild, stimulating action to an intensely caustic one, the acid being collected at the positive, the alkalies at the negative. The eschar of the positive pole is dry and firm, that of the negative soft and pliable.

The interpolar action was at first bitterly opposed by some, but is now a recognized fact.

The action upon the tissues can be divided into:

1. The *electrotonic* action. It is the electrification of the elements of tissue, each pole producing a state diametrically opposed to that of the other; and it varies in intensity directly in proportion to the distance from the poles. Possibly there is a small neutral zone midway between.

It is to this action that we owe the visible signs of the current: each tissue responds in its own peculiar way, according to its physiological action, on making, breaking, or reversing the current. The motor nerve communicates a motor impulse, the sensory nerve a sensory impulse, the muscle contracts, etc. It is this power that excites physiological activity in the tissues; in doing this, it promotes circulation, increases nutrition and chemical interchange in the different organs. This electrotonic action is more powerful at the negative than at the positive pole, and accounts for the difference in sensation at the two poles.

2. The *catophoric* action—the power of promoting osmosis, together with a transferring of substances from the positive to the negative pole. This has lately been proved beyond a doubt by using aconite, morphia, cocaine, etc., thereby producing the characteristic effects on the tissues. This action thus far is comparatively of little importance in medicine.

3. The *catalytic* action—the power, by electricity, of splitting up compound bodies into their constituent elements. A compound in the state of electrification causes its molecules to take on different states, the negative and positive, which repel each other and fly apart. The stronger the current the more intense this catalytic effect, disintegrating and destroying the tissue. This destructive agent can, like any other, be used to promote, first, de-

struction, then absorption. It has the advantage of not being limited to the surface contact, but acts equally well between the poles.

According to the intensity used, the therapeutic action of electricity can be divided into contractile, stimulating, alterative, absorbent, and caustic.

My own work has thus far been entirely limited to endometritis and chronic inflammations of and around the uterus.

The electrodes I have used for intra-uterine work were of the pattern of Apostoli—the long sound, insulated by a movable hard-rubber tube. This I found satisfactory in all cases where a simple stimulating or tonic action is desired; but in cases of endometritis when galvano-cautery is needed, it is, in the first place, too large a surface, and, secondly, the pain experienced in the cervix is so great as to preclude an intensity sufficiently high to be effective. I then used the carbon points, one inch long, on an insulated stem also graduated in inches. This was very effective; but fearing lest the carbon was too porous and brittle, I made the points of aluminium. I have used it as positive pole in several sittings of five minutes with more than 100 milliamperes, and find that it stands the current remarkably well. Judging from my experience, it can be used instead of platinum, and has the advantage of lightness and of being easily fusible; pure, it melts a little above zinc—about 600° F.

My method in all my cases has been as follows: If the uterus was bound down by adhesions, I used a mild current, 15 to 20 milliamperes, twenty minutes three times a week. The usual vaginal electrode, covered with absorbent cotton as negative pole, in the posterior fornix vaginae, was gently pressed upward; the positive pole, a large sponge or chamois skin electrode, just above the pubes. This was continued for some three weeks, the patient in the meantime being ordered hot injections and given a general tonic. I was agreeably surprised to find that firm adhesions were readily overcome by this method, the uterus being brought into position with comparative ease. The organ was kept in position by antiseptic wool tampons, left in situ till the next sitting.

In cases where there was no contra-indication to the use of a pessary, I did not hesitate to introduce it after mild stimulating currents; but when the intensity was 100 milliamperes or more, I always used the tampon, as being less irritating and less liable to set up cellulitis.

The negative pole was now applied to the uterine cavity, the electrode with movable insulation being used, so that the cervix as well as fundus was stimulated by the current, which was gradually increased to 30 or 40 milliamperes. The effect of this treatment, combined, of course, with proper constitutional treatment, was really very gratifying. A large, flabby uterus, with three and a half or more inches depth, in the space of four or five

weeks would be reduced to almost normal size, and the heavy, dragging sensation about the pelvis relieved, so that the patient attended cheerfully to her household duties.

If, however, the case was one with a train of symptoms commonly designated as chronic metritis with endometritis, frequent menorrhagia, etc., instead of using the curette I began treatment with an intra-uterine application, administered by the electrode, insulated to within an inch of the point; this being the positive pole, the intensity from 100 to 120 milliamperes. I began at the fundus, allowing from three to five minutes, withdrew the electrode one inch, and again applied the current for same length of time; repeated thus the application till the whole of the endometrium had been cauterized. A dry tampon of antiseptic borated cotton was placed against the cervix, if there was no flexion, when the proper tampon to hold the uterus was used and the patient ordered to remain as quiet as possible.

The cautery was repeated in from eight to ten days, supplemented in the meantime by mild applications, the positive pole in the vagina, the negative to the abdomen.

In no case, after cauterizing, did I use an intra-uterine douche as recommended by Apostoli in his work on this subject published in Paris in 1887. In every case with fair constitution thus treated, I found a decided decrease in the duration of the following menstrual period, and a decided change for the better in the local condition. In a case of subinvolution, the patient otherwise in good health and condition; electricity acts rapidly, the cure is positive and effects permanent.

If, however, on the other hand, the patient is neurasthenic, debilitated, and anemic, the prospect is entirely changed; the first effect may be good but not permanent, and, in order to make it lasting, must be reinforced by all known methods to better the constitution and general condition, if we wish to insure success. In fact, electricity must be used simply as an adjunct to the other more important agents directed to the general health.

Dr. Lucien Carlet (Paris, 1884) first published a full report of Dr. Apostoli's first 94 cases of fibrous tumors of the uterus. Dr. Apostoli himself shortly afterwards made a report of 118 cases to the Académie de Médecine, in which he made a full exposé of his treatment, and the success, he claimed, was phenomenal.

Later, before the British Medical Association, he was severely criticised, and most of the arguments were doubted. Dr. Geo. Engelmann, of St. Louis, took up the subject and was quite enthusiastic over the method.

Dr. Ephraim Cutter in 1887 (*JOUR. OBST.*) reported 50 cases of fibrous tumors—11 cured, 3 relieved, 20 growths arrested, and 4 fatal. Dr. Keith, in *Brit. Med. Journal*, 1887, shows the high mortality of supravaginal hysterectomy (25%), and says it has done more harm than good; that the mortality is out of propor-

tion to the benefit to the few. Dr. Keith made 1,200 applications in 100 cases in five months, and says several of these escaped hysterectomy and oöphorectomy; menstruation normal; tumors reduced in size, and they enjoy themselves. In concluding, he says: "So strongly does he now feel on this subject that he would consider himself guilty of a criminal act were he to advise his patient to run the risk of her life, even were he sure that the mortality would not be greater than that in his private cases—under four per cent."

Sir Spencer Wells and Dr. Playfair likewise speak extremely favorably of it after many applications according to Apostoli's method, and concur in the statement that electricity should be given before resort to the knife.

Dr. F. H. Martin (*AM. JOURN. OBSTET.*, June, 1888) reports 15 cases—5 absolutely cured, 5 symptomatically, 4 benefited, and 1 not fit for treatment. Dr. Martin at first used the regular sound electrode of Apostoli, but, finding the surface too great for cauterization, used one of his own contrivance, all insulated except a platinum point, 3 mm. diameter, 4 long, giving 4 square cm. surface. On this he used a current of 100 milliampères. I cannot see that this has any advantage over Apostoli's late electrode—the one graduated in inches, with points one inch long and of different sizes. On the contrary, I should think the nearer the electrode fitted the cavity, provided the surface was not too great, the better cauterization would be insured. Dr. Martin's success, however, has certainly been remarkable; some of the cases were large, painful hemorrhagic neoplasms, reaching to the umbilicus.

The reports are for the most part quite flattering; but if we look on the other side of the question, we shall see that it is not devoid of danger. There are quite a number of fatal cases on record, and still more which were followed by septicemia, chills, nausea, etc., especially those in which galvano-puncture has been practised. Dr. Van de Warker (*AM. JOURN. OBSTET.*, 1888, p. 1053) reports three of his cases. In his opinion, they are a special formation of fibroids which have a tendency to cyst formation. Almost all experimenters report here and there a case or more, showing at least that the process is by no means devoid of danger; likewise advocating extreme care, strict antisepsis, and rest in bed for a time after the operation. No one, however, gives a satisfactory answer to these unfortunate terminations.

In my opinion, Dr. Gehrung (*AM. JOURN. OBSTET.*, 1888, p. 820), strikes the keynote when he says it is due to the non-absorption of the product of electrolysis, which produces an irritation, forms the nucleus of a cyst, sometimes suppurates, and thus produces an unfavorable termination. Dr. Gehrung, to obviate this difficulty, has made an instrument that acts as a drainage tube and an electrode at the same time, allowing the escape of all fluids and gases.

It can likewise be used as a small trocar for tapping cysts and abscesses before using the current.

It was at first thought that the reduction in the size of tumors was brought about by a direct electrolytic action on the elements of the tumor. I cannot, however, conceive this to be possible. I doubt exceedingly if any electrolytic action takes place in the interpolar circuit, but believe that it extends only a small distance from the poles, if it is not entirely a polar action. In cases of extirpation following immediately after using the galvanic current, no such decomposition or destruction of tissue has ever been found. That it can and does produce this electrolytic action at the pole, after using very high intensities, is beyond doubt; and I am convinced that an unnecessarily high intensity increases the amount of this destroyed tissue, hinders its being freely absorbed, and is often accountable for the evil results following galvano-puncture, by the retention of this fluid and gases that undergo decomposition.

The neoplasm, as a rule, atrophies and may altogether disappear, which I am inclined to believe is almost entirely due to the catalytic action of the current. On account of this violent state of electrification, nutrition is stopped, metamorphosis ensues with an absorption of the product, producing a diminution in the size of the tumor.

The tumors suitable to this treatment are those of the interstitial variety, at least those attached to the uterine wall by a large base. *The less fibrous tissue the better the success.* I should certainly recommend submucous or subperitoneal neoplasms with small base for immediate operation by the knife.

In electricity we have an extremely useful adjunct to gynecological treatment. It is one of the best cauteries known for the endometrium, safer and more easily regulated than any other, and supplies a long-felt want in that troublesome disease, chronic endometritis — in fact, is almost a specific for metrorrhagia, whether due to subinvolution or fibrous tumors.

Inflammatory deposits, adhesions, subinvolution, and flexions are benefited by its stimulative and tonic action.

Faradization and mild stimulation often afford much relief to the pain of dysmenorrhea, ovarian neuralgia, and irritable condition of the ovaries.

Faradization in acute inflammatory processes of the pelvis, and galvanism in salpingitis and hydro-salpinx, are still sub judice; possibly they are of benefit, but need more proof.

DR. W. H. TAYLOR considered the paper a carefully prepared résumé of our present knowledge of electricity in the treatment of diseases of women. He indorsed all of the essayist's statements. The galvanic current is undoubtedly of value in many cases of neoplasms, exudations, fungoid growths, and defective involution of the uterus. One valuable application of the electric current the speaker did not touch upon, perhaps because it did

not come within the scope of his paper, namely, in extra-uterine pregnancy.

DR. J. L. CLEVELAND said he had some experience with electricity, but it was so limited as not to be worthy of special report. He used electricity in isolated cases in his office, but not more extensively in gynecology than in other departments of medicine. In two cases of endometritis, he thought he had derived some benefit from it, and one case of painful menstruation was relieved by it.

DR. E. S. MCKEE said that, although he had seen others use galvanism in gynecology abroad, he himself had but limited experience with it. He agreed with Dr. White in the main, but, although the speaker favored electricity, he was not an enthusiast in its use.

DR. E. W. MITCHELL thought that many of us fail in the results to be derived from electrical treatment because we have not yet fully mastered it. He was of the opinion, however, that although the practical application should be fully understood, it was not necessary to be fully conversant with the whole science of electricity; any one with a scientific training ought to be able to learn how to apply electricity safely. The galvanic current has remarkable power for relieving pelvic pain, and in many cases may cure certain pelvic diseases. Nevertheless he thought that extravagant claims had been made for it. No one can fairly question the value of electricity in the treatment of fibroid tumors of the uterus. The speaker had two such cases under treatment, in one of which he used electricity for three months, and in the other he had just begun it. The first was certainly very much relieved; the patient had bled profusely, was very anemic and bedfast. Treatment was begun by thorough dilatation of the cervix, a removal of a portion of the tumor, and later the application of the current. On this account he was unable to say how much of the reduction was due to electricity alone, but the shrinkage is remarkable; it does not now nearly fill up the pelvis, and has diminished from seven to four inches in length. The relief from pain and diminution of hemorrhage were almost immediate. A flow came on lasting three days, but it did not amount to hemorrhage.

In the treatment of dysmenorrhea he regarded electricity as of special value. One case of his was entirely relieved by occasional applications. The séances were held twice a week, the negative pole being applied over the lumbar region, whilst the positive was placed over the ovaries. The highest intensity employed was 75 milliampères. He never yet treated a case by galvano-puncture. This method is certainly not so safe as the intra-uterine method. He remembered one case of enormous fibroid that was treated through the abdominal wall, but it had no effect in checking hemorrhage.

DR. EDWIN RICKETTS said he had seen the galvanic current used considerably abroad, but he was not favorably impressed with its results. Even death from sepsis had been recorded as the result in one case. Keith is said to have used galvanism very frequently of late, having made as many as 1,200 applications in 150 days. If this be so, he would have to work twelve hours per day with this treatment alone to get his results. Personally the speaker had but little experience with it, and in the treatment of endometritis Churchill's tincture of iodine and the curette will do as much.

DR. JULIA CARPENTER found electricity very efficient in dys-

menorrhœa, especially in young girls. She had given complete relief in some cases by galvanizing the splanchnic nerve, the negative pole being applied over the epigastrium, with the positive over the thoracic spine. She never used a strong current. In regard to the use of galvanism in old inflammatory products, she was on the point of using electricity for this purpose when she saw a report of Dr. Buckmaster, of Brooklyn, who had used a five to ten per cent solution of sulpho-ichthyolate of ammonium for this purpose, which scattered these old exudations with great rapidity.

When a large abdominal electrode is necessary, instead of Apostoli's clay electrode she employed the wire gauze (covered with chamois skin and absorbent cotton) as made by Waite & Bartlett, which she regarded as much more clean and convenient than clay.

DR. GUSTAV ZINKE was not quite ready to report his results. He secured some benefit in endometritis and certain forms of dysmenorrhœa, but where no actual change and no definite cause for the pain are to be seen it is difficult to understand how much of the good result is due to electricity. In some cases of amenorrhœa, he succeeded in establishing a flow by this means. He had in his care a young unmarried lady who would cease to menstruate two or three months at a time, when the flow would be re-established by the repeated application of the galvanic current every other day for a week or ten days prior to the expected menstrual period. She has since married, and has given birth to several children. Previously she had menstruated, but it had stopped three times. A sister of the patient died of phthisis at the age of 18, and ceased to menstruate when this disease developed.

The speaker then reported a case of multiple subperitoneal and interstitial fibroid tumor, exhibiting the specimen, which he had treated by electricity, causing a diminution in the whole mass, probably in consequence of a decrease in the interstitial growths. The woman died of an acute peritonitis six months after electricity had been employed.

DR. WENNING said, if he made any remarks at all, it was not for the purpose of giving his experience or imparting any knowledge, but to express his personal obligations to his friend, Dr. White, for his clear exposition of the subject. He was under personal obligations to him because the doctor fitted up an electric apparatus (which was presented in part by Dr. Cleveland) at St. Mary's Hospital, and indeed made all the electrodes with his own hands. The speaker was, therefore, as yet a tyro and only learning to use the current. In one case of pelvic abscess which had opened into the rectum, discharging an enormous amount of pus, a number of months ago, the speaker recently applied the electric current in mild strength for the purpose of causing absorption of old adhesions and remains of the exudation. The patient had not menstruated over a year, and, after the first application of the current, she began to menstruate, the flow continuing for about five to six days. The patient was delighted with the result, as the amenorrhœa had troubled her mind; but the speaker was loath to repeat the treatment again on account of the increase of pelvic pain.

The chief merit of Apostoli lies in the exact dosage of electricity by milliamperes, instead of the regulation of the current by certain numbers of cells; the electricity in different cells is not uni-

form in intensity, and hence we are never certain of the exact strength employed without the use of a milliamperé-meter. In the treatment of fibroid tumors, this is of prime importance, whilst in the functional disorders of menstruation—amenorrhea or dysmenorrhea—it is probably not of great moment. Perhaps for this reason more benefit has been derived from the use of electricity in the latter than in the former affections of the womb, where the dose of electricity ought to be regulated with just as much minuteness as that of medicines employed.

DR. WHITE concluded the discussion by replying to one of the gentlemen that Dr. Keith's figures would show but eight cases per day, which could be treated in one hour. Moreover, he had his assistants, in whose hands he could place such patients as he did not care to attend personally.

The speaker did not touch upon the treatment of extra-uterine pregnancy, as it belonged to obstetrics. He would remark, however, that if we endeavor to kill the fetus by destroying the circulation of the placenta, the faradic current is the best; but if we wish directly to destroy the fetus, a strong galvanic current is to be preferred. Some authors recommend the introduction of a fine trocar into the sac, through which the positive current is to be used. If this be done, the needle should be already electrified with a mild current before it is introduced; for a needle already electrified makes a smaller opening and prevents an escape of fluid.

As regards displacements, the speaker could report one case of retroflexion that had resisted other means. He then treated her three times a week by electricity, and in two to three months he could remove the pessary entirely, the womb remaining in place. He had always reintroduced the pessary after each treatment, to prevent relapse.

The galvanization of certain nerves was mentioned by one speaker. He would reply that this was a very difficult matter, because the axis cylinder is insulated against the electric current.

The action of electricity in causing reduction of fibroid tumors is explained by most authorities to be on the principle of electrolysis—the destruction of the fibroid itself. He could hardly believe this, because too small an amount of hydrogen gas is evolved to cause this chemical change. He regarded this change as entirely due to a catalytic action.

The treatment of old or chronic pelvic inflammation is usually spoken of in connection with electricity. Apostoli claims that an acute inflammation can be aborted by the electric current as soon as the beginning of the inflammatory process shows itself.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Wednesday, May 1st, 1889.

A. L. GALABIN, M.D., *President, in the Chair.*

Specimens.—DR. M. HANDFIELD-JONES: 1. Hydrocephalus and Spina Bifida in a New-born Child; Lower Extremities Distorted by Umbilical Cord; 2. Photographs of a Similar Specimen. DR. PERIGAL (New Barnet): An Anencephalous Monster. DR. W. DUNCAN: Ruptured Tubal Gestation, removed during Life.

INVERSION OF UTERUS OF SIXTEEN MONTHS' STANDING—REPLACEMENT—RECOVERY.

This paper was read by DR. W. NEWMAN, surgeon to the Stamford Infirmary. The patient was twenty-three years old, and was delivered of her first child on July 22d, 1887, being attended by a midwife. Convalescence was very slow, and she became weak, anemic, and subject to slight but almost continuous hemorrhage. The patient was admitted into the Stamford Infirmary on November 20th, 1888. The os uteri was found to be dilated; a large globular mass projected through it and filled up the vagina. The sound slipped over the tumor, and was arrested all round three-quarters of an inch above the margin of the os. The fundus could not be felt above the pubes. The speculum displayed the mass, which was very vascular, bleeding on the slightest touch. On November 24th, at 10 A.M., Aveling's repositor was introduced, the disc being one and one-quarter inches in diameter. The instrument was fitted with shoulder straps and waistband of linen, and four india-rubber bands (pressure, two pounds, as tested) connected them with the stem of the instrument. Eleven hours later the disc had slipped slightly to one side. Twenty-four hours later the instrument was replaced (pressure, three pounds). The disc slipping again, it was removed thirty-one hours after its first introduction. The hemorrhage ceased. On December 9th, at 4:30 P.M., the repositor was again employed, with a wooden disc two and three-quarter inches diameter. A wide belt of soap plaster on moleskin was applied just below the iliac crests to give a firm basis for fixing the instrument. Four rings, at proper distances, were fastened to this belt by loops of tape. The elastic bands (pressure, three pounds) were made fast to these rings. In fifteen hours, the instrument was removed and replaced; in twenty-four hours, it was once more removed, and the original smaller disc substituted (pressure, four pounds). On December 11th, at 9:30 A.M., the disc

was found to be buried, together with over one inch of the stem. The instrument was removed with difficulty. The uterus was found to be reduced. On January 12th, 1889, a normal period occurred; on January 29th, the patient went home quite well. Dr. Newman attributed the failure of the first attempt at reduction to the small size of the disc and the imperfect counterfixation of the repositor by the shoulder straps and belt. He advocated the plaster belt which he had contrived.

DR. WILLIAM DUNCAN said that, in effecting reduction by means of Aveling's repositor, it was essential to pack round the cup, so as to prevent it from slipping. He mentioned a case where chronic inversion had existed for nine years, and where he effected reduction with the repositor. The cup had passed into the uterine cavity and the cervix contracted on the stem, so that much difficulty was experienced in removing it. Each case should be watched carefully, so that the cup could be removed as soon as reposition of the inverted uterus had been effected.

DR. MATTHEWS DUNCAN said that he had about one case of inversion yearly, and he found that such a case could be reduced, without any serious difficulty, by continued pressure, after the great principle of Drs. Tyler Smith and West. As in Dr. Newman's case the inverted uterus filled the vagina, Dr. Duncan believed that a fibroid existed as well. Dr. Duncan did not trust current histories of "subinvolution," for the uterus underwent rapid and complete involution after labor. In chronic inversion, he always found the uterus small and completely involuted. The difficulty in reduction began at the contraction ring near the internal os. Replacement occurred suddenly, and was known to the patient and nurse by the new kind of pain which it caused and by the slackening of the bands of the repositor. Retention of the disc was occasioned by contraction of the cervix, and was overcome by prolonged traction without much delay.

DR. MONTAGU HANDFIELD-JONES advocated elastic traction to the stem of the instrument when the disc of an Aveling's repositor was retained. This secured its withdrawal by gradual dilatation.

DR. ROBERT BARNES attributed the merit of introducing the treatment of chronic inversion by sustained air pressure to Dr. Tyler Smith; Dr. Charles West followed. Acute and chronic inversion must be distinguished, and the distinction was ruled by the involution of the uterus. This was generally accomplished within a month after delivery; during that month restoration was not usually difficult. But after that time inversion was chronic and reduction became more difficult. Dr. Barnes had contrived an elastic pad which, when adjusted to a repositor, insured sustained elastic pressure. The contrivance had answered perfectly in several cases. Dr. Aveling's repositor added the perineal curve. Dr. Barnes had incised the constricting neck to facilitate reduction, publishing a paper on the case in the *Medico-Chirurgical Transactions*. Experience had taught him since that this proceeding would very rarely be required. A Hunterian specimen of an inverted uterus due to fibroid was preserved in the Museum of the Royal College of Surgeons. In a similar case, Dr. Barnes had felt it necessary to amputate the uterus; the patient did well. In ordinary cases, amputation was never thought of in England; in this respect, the Germans were far behind us.

In reply, DR. NEWMAN, after some remarks by the President, declared that the smaller disc slipped because it covered so limited a portion of the convexity of the inverted organ. He could detect no fibroid. The plan which he had adopted for obtaining fixed points from which the elastic pressure would act with greater certainty, and the recording of the exact amount of pressure, were the subjects on which he specially laid stress.

ON ACUTE NON-SEPTIC PULMONARY DISORDERS AS COMPLICATIONS OF
THE PUERPERIUM.

The author, DR. JOHN PHILLIPS, physician to the British Lying-in Hospital, drew attention to what he considers a special group of cases, which may be denominated "acute non-septic pulmonary disorders," occurring during the lying-in state.

He divides a total of eight cases into two groups, each presenting peculiar characteristics. In Group I. are included four cases, one of which was a personal experience. He considers that the first three cases detailed have peculiar physical signs and symptoms, viz., rapid formation of dulness, absence of fine crepitation, and frequent sequence of phlegmasia. The author calls attention to the peculiar course of the temperature and to the occurrence of temporary or permanent valvular cardiac disease.

Group II. consists also of four cases, in which the onset of labor appeared to act as a stimulus to a pre-existing pulmonary lesion, rendering a chronic ailment acute.

The septic and embolic theories are discussed and negatived.

The probable pathology of these cases is stated.

DR. HERMAN had had under his care one case of pneumonia during the lying-in period, and it did not present any differences from the same disease in men or in non-puerperal women. After the pyrexia had lasted for a day or two, the lochia became fetid; this phenomenon had already been discussed before the Society. There was no fetor before the pyrexia, and antiseptic douches were used throughout. In a case of bronchitis with emphysema and cardiac dilatation, occurring after delivery, Dr. Herman noted no special peculiarity. The absence of fine crepitation, on which Dr. Phillips dwelt, might signify that it was not present at the time that the chest was auscultated, for that symptom was sometimes of very short duration in pneumonia. The number of cases was hardly large enough to make the coincidence of some of them with phlegmasia an argument of weight. After dwelling on other facts which seemed to indicate that there was nothing special in these pulmonary disorders during the puerperium, Dr. Herman said that he at least agreed with Dr. Phillips in the inference that any illness occurring in a patient who had been exposed to the chance of septic infection was not necessarily septic. Septicemia was now known to be a disorder with definite symptoms, and, unless these symptoms were present, no illness should be held to be septic. These remarks specially applied to phlegmasia dolens, which was seen in septic cases, but the ordinary form had nothing to do with septicemia.

DR. ROBERT BARNES said that, in a paper in the Obstetrical Society's Transactions referred to by Dr. Phillips, he had expressly

described a form of bronchopneumonia, as a phase of puerperal fever, distinct from the form described by Virchow as due to minute emboli carried to the lungs. Respecting thrombosis, Dr. Barnes demurred to the proposition that that phenomenon took place independently of septic influence. For there was a source of septic matter which arose in the patient's own system from repressed secretion; an enormous quantity of effete matter was thrown into the circulation during involution; if not rapidly discharged, uremia and fever resulted, and thus thrombosis as well as bronchopneumonia might set in. The puerperal blood highly charged with fibrin, and a noxious stuff capable of producing coagulation, were the factors necessary for the production of thrombosis, which was never "spontaneous." The appearance of Dr. Phillips' cases of bronchopneumonia in winter or under the influence of cold, when excretion was checked, confirmed Dr. Barnes' opinion as to the important part which arrest of secretion played in puerperal fever. Dr. Barnes strongly urged that meteorological influences and conditions should in future be registered, together with the usual factors in the clinical records of puerperal diseases.

DR. LEITH NAPIER held that a puerpera might suffer from any true acute inflammation without the influence of septicemia; non-septic peritonitis certainly occurred after labor. He had seen one case of acute non-septic pneumonia; nevertheless this class of disease was rare. The conditions included in Dr. Phillips' second group were far more common. Dr. Napier gave details of a case in point.

DR. MATTHEWS DUNCAN, admitting the value of Dr. Phillips' paper, had expected that he would describe and illustrate the pneumonia and pleurisy of lying-in women—simple inflammations which Dr. Duncan believed occurred in this connection as in pregnancy. He had seen such simple inflammations; they were etiologically unaccounted for. Dr. Phillips' cases rather represented a well-known but imperfectly understood disease, in which pleurisy or pleuropneumonia or pneumonia occurred with swelled leg on the same side. Such were probably not simple inflammations, but were to be classified with the swelled leg of fever—a disease already described by Christison and Begbie. Dr. Duncan had often found in puerperal fever inflammatory edema of the lung without the usual signs and symptoms of pneumonia. This condition resembled the inflammatory edemas sometimes found in such cases in the limbs or on the trunk, forming big, tender masses which did not suppurate.

DR. GIBBONS had taken charge of cases of pulmonary trouble which were undoubtedly due to catching cold and were not septic. The cases where phlegmasia occurred were in all probability septic. When the pulmonary trouble set in during the first few days after delivery, when the most serious trouble in the puerperal state usually appeared, the cause was probably septic; nor could it be definitely proved that any such case was non-septic.

DR. BOXALL held that the pulmonary disorders referred to by Dr. Phillips were rare, hence it was hard to criticise satisfactorily Dr. Phillips' propositions. Dr. Boxall then proceeded to analyze the seventeen cases of pneumonia in connection with pregnancy, puerpery, and lactation, included in the three hundred and fifty-six cases of pneumonia in the female as noted in the "Collective

Investigation Record," vol. ii., 1884. Whilst so doing, he insisted that in gauging the association of phlegmasia dolens with pneumonia during the puerperium, the occasional occurrence of similar conditions, where the disease was met with under ordinary circumstances, should not be overlooked. The series just referred to included cases of the kind, besides suspicious cases of "muscular rheumatism of calf" and "rheumatic pains," possibly signifying thrombosis of deep vessels.

DR. PHILLIPS, in reply, said that he had in his paper endeavored to prove the possibility of pneumonia in lying-in women being not always septic, even if complicated by phlegmasia dolens. He thought that some Fellows who joined in the discussion certainly corroborated his theory. It was impossible, with so few cases at his disposal, to lay down any opinion dogmatically; but by calling attention to the subject something might result towards dissipating the too generally accepted idea that all these classes of cases were of a septic nature.

Wednesday, June 5th, 1889.

A. L. GALABIN, M.D., *President, in the Chair.*

DR. HERBERT R. SPENCER, assistant obstetric physician to University College Hospital, read a paper on

THE DIAGNOSIS OF PLACENTA PREVIA BY PALPATION OF THE ABDOMEN.

Having described shortly two cases in illustration of the possibility of determining the site of the placenta by abdominal palpation when it is situated in the *upper* segment of the uterus, the author gives in detail seven cases of placenta previa (all the cases he has investigated from this point of view) in which he has been able by palpation of the abdomen to diagnose the presence of the placenta in, or its absence from, the front wall of the lower segment before a vaginal examination was undertaken, the diagnosis being subsequently verified by vaginal and intra-uterine examination.

The seven observations were all made in multiparæ with head presentations, before the membranes were ruptured, without the employment of an anesthetic, and in the absence of pains.

In three of the seven cases, the exact site of the placenta on the front wall of the lower segment was determined by abdominal palpation, and in two of these the placenta was felt at a time when it was impossible to feel it by the vagina.

In the remaining four cases, the placenta was diagnosed by abdominal palpation to be absent from the front wall.

In making the examination, it is recommended that the patient lie on her back, the bladder having previously been emptied; the examination should be gentle, made in the absence of pains, and prolonged over several minutes, or repeated if necessary.

The following rules for making the diagnosis are formulated:

In an ordinary vertex presentation (placenta in the *upper* seg-

ment), the occiput, forehead (at a higher level), and side of the head can, under favorable circumstances, be distinctly felt in the lower segment of the uterus by means of abdominal palpation.

In a case of placenta previa in which the head presents, the head is not felt where the placenta is situated; it is distinctly felt where the placenta is absent. In cases where the placenta is in front, the organ is felt as an elastic mass of the consistence of a wetted bath sponge, which keeps the examining fingers off the head. Its edge may be felt, and has the shape of the segment of a circle; within the circle all is obscure to the touch; outside the circle the head or other part of the child is plainly felt. Impulses to the head are not clearly felt through the placenta; impulses to the head through the placenta are distinctly felt at the spot from which the placenta is absent. The same applies to combined vaginal and abdominal examination.

The author believes the method of diagnosis he has described to be of some practical importance, and solicits a more extended trial of its value.

DR. BRAXTON HICKS considered that the author had done something to remove the slur, cast by the French and others, that abdominal palpation is not taught in England. Incidentally, in writing, Dr. Hicks had stated that, in many cases, the seat of the placenta could be identified by the hand, the placenta being on one side and the fetus on the other side of the relaxed uterus. In one case of placenta previa, he had diagnosed the position some weeks before it was confirmed during delivery.

DR. BARNES thought that the paper was a valuable contribution to the art of scientific diagnosis. It was observed by others, and he had himself confirmed the observation, that when the placenta was seated in the upper zones and in front of the uterus, the uterine wall was thickened and raised at the area of placental attachment, forming a hillock which rose above the level of the smooth surface of the uterus. This was also confirmed by auscultation.

DR. MATTHEWS DUNCAN had long and often sought to diagnose the position of the healthy placenta during pregnancy by palpation, and had always failed. Meantime he did not believe that it could be done; but what he had heard to-night would make him return to the subject, and he was ready to learn. In order to know what was to be expected and felt, it was necessary to divest the mind of the perception of the feeling of a born placenta, and to learn the feeling of an attached, living, healthy placenta in the uterus. The born placenta was a thrombosed cake. Tracing the cord into the uterus, as in a version, the obstetrician came to the placenta, and felt it ill-defined, soft, with a fretted, vesicular surface, not easy, in fact, to recognize at first touch. Placenta previa was not the best condition for the study of this supposed palpation. Far more favorable for the purpose were the conditions of advanced healthy pregnancy in a multipara with a relaxed uterus and a thin abdominal wall. If placental palpation were ever made out, it would be there. Dr. Duncan had never made it out.

DR. CHAMPNEYS asked Dr. Hicks and Dr. Barnes whether, in the

cases in which they had stated that they had felt the placenta from without, they had verified their diagnoses by internal palpation, or whether they felt something which they believed to be placenta. The value of Dr. Spencer's paper lay in this verification, though the cases were few. Dr. Champneys was surprised to hear Dr. Barnes speak of diagnosis of the placental site by auscultation. In two or three cases of advanced extra-uterine pregnancy in which the placenta could be plainly felt, and in which the diagnosis was established by subsequent abdominal section, no sound was ever heard over it, though repeatedly sought for. For these and all other reasons, he believed that auscultation was no guide whatever to the situation of the placenta.

DR. JOHN PHILLIPS stated that in a case of Cesarean section which had occurred in his practice, every attempt was made, on exposure of the uterus, to discover the situation of the placenta by auscultation and palpation. The evidence being negative, it was concluded that the placenta was situated at some distance from the line of incision. Yet, on making the incision, the placenta was found immediately beneath. This experience militated against the possibility of diagnosing the position of the placenta through the abdominal walls.

After some observations by Dr. Hayes, it was noted by DR. HERMAN that in all the reported cases the fetal head occupied the lower uterine segment. Thickening of the lower part of the uterus was easier to appreciate when the head filled that part than when it was occupied by softer and more movable parts of the fetus. In the reported cases, the placenta was described as "an elastic mass," the edge of which could be felt. Such placenta were the exception, and, as Müller had demonstrated, were generally thinner than usual and expanded. Thus Dr. Barnes had described a placenta that enveloped the fetus like a sac, and Dr. Hicks had noted a case where that structure occupied almost the whole inner surface of the uterus. Dr. Herman was surprised to hear Dr. Barnes speak of ascertaining the position of the placenta by auscultation. He thought that it was now conclusively proved that the uterine souffle had nothing whatever to do with the placenta. In extra-uterine pregnancy, it was so rarely heard that its absence had been considered as an indication that pregnancy was extra-uterine.

DR. WILLIAM DUNCAN dwelt on the difficulty of diagnosing the position of the placenta by external palpation. A few months ago he performed Porro's operation. When the anterior surface of the uterus was exposed, it was not found to bulge forward, nor was it deepened in color, as should be the case, according to Dr. Spencer, when the placenta was in front. Yet on plunging the knife into the uterus the placenta was cut through.

DR. BOXALL had made it an invariable rule to examine the abdomen with all the precautions advocated by Dr. Spencer; yet he had rarely found palpation of any avail in determining the placental site. He had, however, investigated the position of the placental implantation by other methods, commenced five years ago; they led him to the conclusion that, while the sides, front, and back were about equally favored, the placenta tended very distinctly to avoid the two poles of the uterus. At the same time, considering that, generally speaking, a point somewhat nearer the upper than the lower pole was the selected site, and that the placenta was very rarely attached quite low down in the uterus, Dr.

Boxall was not a little surprised to find the relative frequency with which the lower or dangerous zone was incroached upon without of necessity entailing hemorrhage. He could, however, call to mind no case in which, when proved by other means to be implanted low down on the anterior wall, it had been possible to map out the position of the placenta by palpation of the abdomen.

After some remarks by the President, DR. BRAXTON HICKS said, in answer to Dr. Champneys, that for many years he had seen from time to time such proofs as led him to feel certain that the position of the placenta could be made out not infrequently. In regard to Dr. Matthews Duncan's observations, he would add that, though in many cases it might be difficult to recognize this, he thought that if this paper by Dr. Spencer led to more extended observations the author's conclusions would be established. Dr. Hicks himself pointed out, not so very long ago, that the uterus during the whole of pregnancy was intermittently contracting and relaxing, and now that fact was fully recognized.

DR. BARNES was ready to accept Dr. Matthews Duncan's and Dr. Champneys' avowal that the placenta could not be made out by palpation, as applied to themselves; but those obstetricians were not entitled to deny that others could do it.

After some remarks by Dr. W. S. A. Griffith, DR. SPENCER replied he had stated in his paper that the placenta was not firm to the feel, and had likened its consistence to that of a wetted bath sponge for want of a better simile; it was a soft, elastic swelling. He was rather surprised to hear that Dr. Braxton Hicks and Dr. Barnes had for long been able to feel the placenta by abdominal palpation and had not recorded their cases. From observation of the placental souffle in normal cases and in placenta previa, he could not admit that information of diagnostic value could be obtained by auscultation. He would be much surprised if Dr. Matthews Duncan, with one hand in the uterus and the other on the abdomen for countersupport, could not feel the normal placenta. The living placenta did not differ from the dead in consistence only: it was also much larger. Dr. Spencer could confirm Dr. Champneys' statement as to the ease with which the placenta could be felt in some cases of extra-uterine gestation. The Cesarean section and the Porro's operation cited by Dr. Phillips and Dr. William Duncan were not examined under the conditions laid down in Dr. Spencer's paper as essential; besides, they were not cases of placenta previa. He agreed with Dr. Herman that it was probably easier to feel the placenta (previa) when the head presented (as was usually the case); he had indicated this in his paper. From actual measurement of specimens, he did not think that the previal placenta was unusually thin and spread out. The presenting part varied, chiefly as the result of examination or apoplexy. In one of Dr. Spencer's cases, at the eighth month, the part felt by the abdomen was one inch and a half thick near the edge.

**ANTERIOR SEROUS PERIMETRITIS SIMULATING OVARIAN SARCOMA,
WHEN EXPLORED BY ABDOMINAL SECTION—RECOVERY, WITH DIS-
APPEARANCE OF THE CYST.**

Notes of a case illustrating this condition were read by MR. ALBAN DORAN, surgeon to the Samaritan Free Hospital. A sickly girl,

aged 16, was sent to the author by Dr. Herbert Ilott, of Bromley, on May 3d, 1887. In the middle of April, 1887, her period did not appear. An abdominal swelling was discovered, and the patient confessed that pregnancy was possible. A soft, fluctuating tumor, which reached as high as the umbilicus, filled the lower part of the abdomen. The vagina was capacious. The uterus lay high in the pelvis, the cervix was small; the sound could be introduced nearly three inches. The uterus was quite movable, but every movement of the tumor was communicated to the sound. The patient's tongue was bright red and glossy, her appetite bad, and she had lost a brother from tuberculosis. On June 18th, 1887, Mr. Doran made an exploratory incision. The peritoneum was found to be very thick; it adhered intimately to a firm, spongy substance which lay beneath it and oozed freely on section. Suspecting that the disease might be ovarian sarcoma (which is not rare in young girls and is often accompanied by amenorrhea), the operator closed the wound. The patient made a good recovery. Profuse vaginal discharge occurred soon after she left the nursing home where the operation was performed. The swelling slowly diminished; the patient remained sickly, but lived. In September, 1888, Mr. Doran saw her again, and found that all trace of the tumor had disappeared. In April, 1889, she was in fair health. The catamenia, absent since April, 1887, had never reappeared. The nature of the disease was then discussed. The history contra-indicated sarcoma of the ovary, or any other tumor, or ectopic gestation. The fact that the peritoneum, recognized by the urachus, lay in front of the morbid collection, contra-indicated anterior parametritis. Had the disease been tubercular peritonitis, the patient would hardly have recovered her health. Mr. Doran gave reasons for believing that the morbid appearance in this case indicated anterior serous perimetritis, possibly originating in early abortion or gonorrhea. The solid substance under the peritoneum was probably omentum, thickened by old inflammation.

MR. KNOWSLEY THORNTON remarked that the case would probably turn out to be tubercular. He had met with several apparent cures from exploratory incisions in like cases. The amenorrhea would strengthen this view; it was common in tubercle of the peritoneum in young girls. The time which had passed since the operation without fresh outbreak did not, in Mr. Thornton's opinion, contra-indicate tubercle.

MR. DORAN said that, at the operation, neither the tubes nor any other organs could be reached. He thought that salpingitis, gonorrheal, tubercular, or from abortion, might well have been present, at least in the early stage of the patient's illness. He admitted that there was great force in Mr. Thornton's arguments respecting tubercle; according to that surgeon, the disease might be termed anterior serous tubercular peritonitis. Gonorrhea, very possible in this case, may predispose a patient to tubercle of the genital tract.

*Wednesday, July 3d, 1889.**A. L. GALABIN, M.D., President, in the Chair.*

LACERATION OF THE VAGINA IN LABOR.

This communication was read by DR. J. MATTHEWS DUNCAN, physician accoucheur, etc., to St. Bartholomew's Hospital. The author had recently observed two cases of a remarkable vaginal abscess in women recently confined; the symptoms were alarming. He attributed them to laceration of submucous cellular tissue and consequent hematoma. They were characterized by a rounded opening admitting the tip of the finger, which, when pressed, entered a cavity as big as a walnut.

DR. HAYES had recently seen a case which lent support to Dr. Duncan's opinion. A primipara, over thirty years of age, complained of pain in the vagina and vulva a few days after delivery, which had been slow but normal. There was a short perineal tear. Slight febrile disturbance arose and vaginal pain became extreme. Upon further examination, a semi-fluctuating swelling, of the size of a Tangerine orange, was felt in the vagina near its orifice. A well-known surgeon, who thought that the swelling was an abscess, subsequently laid it open; but its contents proved to be chiefly blood-clot mixed with purulent, grumous fluid. Dr. Duncan's cases might, of course, have had a septic embolic origin.

DR. CLEVELAND noticed that in both cases the short forceps were used, yet Dr. Duncan thought that in neither could the laceration be attributed to that instrument. If the author of the paper had himself operated, there would have been no need to raise the question; but Dr. Cleveland submitted that a strong guarantee was requisite, under the circumstances, for excluding the probability of a wound having been accidentally inflicted.

DR. HERMAN had seen one curious case of laceration of the vagina, of a class to which allusion was made by Dr. Duncan, though not included in the main subject of his paper. The case occurred in a patient with a flat pelvis. The head entered the brim with its long diameter transverse, and was delivered with forceps applied in the sides of the pelvis. After delivering the head and removing the forceps, Dr. Herman was awaiting some indication of uterine action, that he might assist in the delivery of the shoulders, when he saw the hand protrude through the anus, the uninjured perineum being between the hand and the head. Then uterine action came on, and the shoulder was driven down, tearing through the recto-vaginal septum from above downwards.

DR. CHAMPNEYS had met with two cases, both some years ago, both in hospital practice, and both fatal from septicemia. In one case, the forceps were used to terminate labor for eclampsia; very little force was necessary. In the other, labor was natural and apparently easy. In both, the openings were round and unlike lacerations. In the second case, the cavity looked unhealthy, and the veins starting from the placental site, and also the internal iliac veins, were full of pus.

DR. BOXALL related the case of a weakly primipara who died seventeen days after delivery. Vaginal examination on the

eleventh day revealed a thickening at the roof of the vagina, fixing the cervix, but no laceration. At the necropsy, two holes were found, quite at the upper part of the vagina and immediately in front of the cervix. Each hole was the size of a sixpence. They lay one on each side of the middle line, and a smaller hole, of sufficient size to admit a goose-quill, was found below and between them. They intercommunicated, and led to a large cavity beneath the mucous membrane. The nature of this condition was doubtful. Dr. Boxall was now disposed to consider the cavity as originating in a hematoma, which had subsequently suppurated and opened spontaneously into the vagina.

DR. HORROCKS described a case, which he saw with Dr. Lynn, of Woolwich, where a hematoma formed between the vagina and rectum, which broke down and opened by a pin-hole orifice into the vagina. It was freely incised, and soon healed. In a second case, the patient complained of great pain in defecation. On examination, a lump was felt in the submucous tissue of the posterior wall of the rectum. Dr. Horrocks asked if this might not have been caused by pressure during parturition, the intervening structures not being lacerated.

After some observations by Dr. W. S. A. Griffith, two cases were described by DR. HERBERT SPENCER. They occurred in primiparæ delivered naturally. In one (inflammation in the usual situation being absent), there was induration of the recto-vaginal septum low down in the middle line, attended by high fever and followed by the discharge of pus and blood into the vagina from a ragged cavity by a hole of the size of a pea. This had led him to diagnose suppurating thrombus. The other case was similar, but not observed to the end. Systematic examination of patients some time after labor would probably prove that injuries of the vagina were more common than was at present supposed.

After Dr. Carter had discussed the subject, DR. MATTHEWS DUNCAN replied. He had dissected in Paris several puerperal fever cases, and was astonished at the frequency of submucous vaginal ecchymosis or thrombus. The case of thrombus of the pudendum mentioned in his paper showed that blood might so accumulate to a very great extent when there was a large opening for its exit. These facts were the bases of his theory of the peculiar abscesses already described. Dr. Duncan was familiar with longitudinal lacerations of the vagina, spontaneous and by forceps. He had seen many of them in consultation when alarming symptoms supervened after delivery, and had observed them in his own private practice. Such lacerations could not be confused with the lesion he now described, for in the latter there was no evidence of laceration.

CHOREA IN PREGNANCY.

The author of this paper, DR. MONTAGU HANDFIELD-JONES, lecturer on midwifery to St. Mary's Hospital Medical School, said that the causes which lead to the production of choreic symptoms were probably numerous. The various theories which have been formulated to explain the causation of the disease might each have their application in different cases. In this communication, the author drew attention to the disease solely when it occurred

in pregnant women, illustrating by two cases one pathological process by which the symptoms of the disease might be caused, and by which they might reasonably be accounted for. The chorea of pregnancy was considered by itself, since in all cases of this variety of chorea there existed one common groundwork, namely, an unstable condition of the nervous system. This condition was always present in the gravid constitution, of which it formed an integral part.

DR. JOHN PHILLIPS, in referring to cases of severe chorea in children, spoke of two methods of treatment not mentioned in the above communication, namely, the warm wet-pack, which often had a marvellous effect in quieting the movements, and forcible feeding by Paley's bottle when there was much exhaustion. These methods seemed quite suitable for the chorea of pregnancy.

DR. HORROCKS believed that chorea was a blood disease in its origin, related to rheumatism. He spoke of the theory of the detachment of fibrinous shreds from the cardiac valves, which shreds, when carried up to the cerebral vessels, were believed by some authorities to account for the phenomena of chorea. In pregnancy, one acknowledged cause of chorea, the blood was certainly altered. Fright was a potent factor in the production of chorea, and also of hystero-epilepsy, and even of true epilepsy, as in a case he had observed where there was no hereditary predisposition.

DR. ARTHUR JAMISON described several cases where chorea was clearly due to fright in pregnant women and others, hence it could hardly be a blood disease. He strongly advocated strong doses of conium; in one severe case where arsenic, iron, etc., had proved useless, marked benefit immediately followed the use of that drug.

DR. HERMAN believed in the connection between chorea and pregnancy. The majority of such cases were benefited by the induction of abortion or premature labor, but not all. There were no rules by which the obstetrician could distinguish the cases which would from those which would not be relieved by that treatment. Such rules could only be established by study of careful clinical reports like those in Dr. Handfield-Jones' paper. Dr. Herman did not agree with the author in his opinion that there was no organic change in chorea. Phrases like "exalted nerve sensibility" conveyed no instruction. The symptoms indicated organic changes, though as yet we had not the means of detecting them. Nor could chorea very well be a blood disease, since it was usually unilateral. Blood diseases were marked by symmetrical phenomena.

DR. AMAND ROUTH related a case of chorea, associated with a low form of puerperal insanity, in a nullipara aged 20. She was single, and pregnancy was ascertained on his examining the patient; the condition had previously been overlooked. Copeman's digital dilatation of the cervix was effected, but abortion ensued within a few hours, and in three or four days, in spite of a sapremic attack, almost all the chorea had disappeared and the patient became rational. In respect to the blood theory, Dr.

Routh noted that almost all cases occurred during the first three months of pregnancy, when the blood state was but little altered.

DR. MATTHEWS DUNCAN had recently seen a patient in whose two only pregnancies there was severe unilateral chorea, so exhausting as to demand induction of labor in the second pregnancy. In the first, twins were born alive at the fifth month. In both attacks there was no anxiety except on account of weakness. The temperature did not rise nor were there signs of cardiac or renal disease. Medicines did no good. After the premature delivery, recovery was rapid.

In reply, DR. M. HANDFIELD-JONES pointed out that in his communication he had not attempted to discuss the possibility of chorea depending, in some instances, on blood conditions or on organic changes in the nervous structures. His cases were quoted solely to show that the chorea of pregnancy was sometimes an outward sign of deranged function of nervous centres, and existed quite apart from any appreciable change in those tissues. He admitted that chorea was sometimes only one item in the rheumatic series, as Dr. Cheadle had recently pointed out in his Harveian Lectures. It could hardly be shown, however, that this point had any application in the cases now under consideration. If the chorea had depended on any lesion of tissue, the interchange between insanity of the muscles, delirium of the higher intellectual centres, and paralysis could hardly have taken place so rapidly.

ABSTRACTS.

I. Freund, H. W.: On Placental Retention Due to Narrowing of the Contraction Ring (*Zeitsch. f. Geburts. u. Gynäk.*, XVI., 1).—The case reported by B. S. Schultze, in which he was compelled to perform Porro's operation on the sixth day, because of puerperal septicemia following retention of the placenta, is unique in the treatment adopted, but retention of the placenta owing to the rapid closure of the cervix is, though a rarity, better known in literature. Cases have been reported by Hegar, Aepli, Seulen, Labusquière, and others. The relative frequency of this accident in abortions is mentioned by all authors. Spiegelberg attributes it to: (1) improper management of the third stage, particularly by traction on the cord; (2) pathological adherence of the placenta; (3) previously existing metritis; (4) premature loss of the waters; (5) ill-timed traction on the presenting part of the child; (6) ergot; (7) "taking cold" of the lower half of the body. Experience shows that these causes are frequently absent. Traction on the cord is regularly practised by many without a correspondingly large number of cases of retention; the same is true of the administration of ergot and where the placenta is adherent. Some cases, too, recur in the same individual with every labor. F. thinks that the etiology is to be sought for in the constitution of the uterus or in the entire system. He narrates seven cases which he has personally seen. While several of the factors formulated by Spiegelberg were present in these cases, he believes the cause to lie elsewhere. In four of the cases the uterus was anteflexed, being congenital in three and

acquired in one. One of the characteristics of this condition is the decided narrowing of the internal os. F.'s deductions lead him to make some practical applications, especially as regards prophylaxis. Where ante-flexion of the uterus is known to exist, all means which may excite the contraction ring must be avoided; the bladder and rectum should be regularly emptied before and during labor; ergot and irritating drinks should be utterly banned. But of chief importance is a strictly expectant plan during the stage of placental expulsion; narcotics in moderate doses may be found necessary; lukewarm douches under weak pressure, moist warm applications to the abdomen, or a full bath may help to relax the rigidity. Should, however, the various means prove of no avail, and decomposition of the retained placenta take place, with infection and increased temperature, extirpation of the uterus offers the only feasible means of averting dangerous consequences.

L. R.

2. Cholmogoroff, S.: The Micro-organisms of the Umbilical Stump (*Zeitsch. f. Geburt. u. Gynäk.*, XVI., 1).—In former times, it was always endeavored to keep anything of a putrefactive character at a safe distance from a puerperal woman. With the advent of antiseptics, suppuration of the umbilical stump has been recognized to have some influence upon the maternal economy. According to Runge, one of two processes takes place in the stump: With a high temperature and a moderate amount of moisture in the accessible air and in the dressings, it mummifies; if the air be excluded and the dressings saturated by fluids, gangrene occurs. The former result should always be sought after, as it hinders auto-infection on the part of the child. Gangrene is a frequent occurrence with the dressings in ordinary use. Fagon-sky recommends the application of powdered plaster of Paris as the most likely to secure mummification. The experiments of the author were made to determine whether bacteria existed constantly in the stump, whether the nature of the treatment of the latter exercised an influence upon their origin and number, and whether their presence was coincident with the beginning of puerperal disease in the mother. His researches were made in Moscow during the months of February, March, April, and May, at which time, it may be mentioned, puerperal disturbances were not endemic in that locality; the children were all free from blenorrhoeic conjunctivitis. After the cord was tied in three places by a tape previously disinfected, it was dressed either with simple absorbent cotton, with lanolin, or with plaster of Paris. Cultures were made from the stump, and from segments of the cord included in the additional ligatures. The results are formulated as follows: (1) The umbilical stump of the new-born infant is absolutely free from bacteria; they come from external sources. (2) Pathogenic micro-organisms which develop in the stump are the staphylococci albus, aureus, et citreus, and the streptococcus pyogenes; of non-pathogenic germs found are the sarcina lutea and the bacillus subtilis. (3) Depending upon its surroundings, the stump disappears either by mortification or mummification. (4) The development in large numbers of pathogenic and non-pathogenic germs is enhanced by moist gangrene. (5) When the stump undergoes mummification, its longer segment becomes the site of the development of non-pathogenic organisms exclusively, while the latter, as well as a moderate number of pathogenic micro-organisms, thrive in the shorter segment. (6) Mummification takes place more completely under a plaster of Paris dressing than when other methods are employed, and the development of pathogenic organism was observed to be reduced to the

minimum. (7) The pathogenic bacteria of the umbilicus are identical with those of puerperal fever. (8) The development of pathogenic micro-organisms in the cord of the child is independent of the existence of puerperal fever in the mother or of blenorrhœic conjunctivitis in the child.

L. R.

3. Ehrendorfer: Report of a Case of Hematoma of the Vulva during Pregnancy (*Arch. f. Gynäk.*, XXXIV., 1).—The patient was 32 years old; had menstruated since her twentieth year, and had had four natural labors; she was in the fifth month of pregnancy on admission. She stated that about ten days previous, while engaged in coitus with her husband, who was overstimulated and violent, she suddenly experienced very acute pain in the right labium majus, which necessitated cessation of copulation. Within a short time following, accompanied by constant pain, a swelling took place in the region of the right labium majus, which, at first the size of a hen's egg, gradually became as large as a man's fist. On examination, the left side of the vulva was found to be somewhat hyperemic, but otherwise normal. On the right side was the tumor, reaching from the upper border of the symphysis to the anus, measuring thirteen centimetres in length and ten centimetres in breadth; the swelling was of a bluish-red color and of tough, elastic consistency. Fluctuation was apparent in situations where the skin was thinly stretched; there was no increase in temperature over the tumor, and no reaction in its surrounding tissues, but the pain from pressure was great. The right labium minus was darkly colored, somewhat edematous, but not unfolded. The tumor presented toward the vaginal orifice. An incision several centimetres in length was made through the vascularized thin skin, and a clot of black-red blood easily expressed. After cleaning of the cavity, considerable bleeding still occurred from the base of the cavity, and, as there could be no possibility of injury during the incision, this vessel was properly regarded as the source of the hematoma. The patient made a rapid recovery, and pregnancy was uninterrupted.

L. R.

4. Ringe, M.: The Therapy of Uterine Myomata (*Arch. f. Gyn.*, XXXIV., 3).—The high mortality attending myomotomies is a surprising but indisputable fact. The author is more and more inclined to dispense with operating in those cases presenting the single indication of "bleeding," and now only resorts to the knife when all other means have been tried without success. The source of the hemorrhage is the diseased uterine mucous membrane. When the endometritis caused by the myoma is removed, control of the hemorrhage is gained. He recommends the curetting of the uterus, followed by the injection of tincture of iodine; he claims it to be the most successful method of checking the exhausting losses of blood, and thinks that the exaggerated fear of the method in the minds of many gynecologists prevents its more general employment. He has never seen the evil effects attributed to it, especially the decomposition of the growth, in a series of forty cases. His custom is to first make thorough examination under anesthesia; the vagina is then very carefully cleansed and the vaginal portion fixed with a forceps; a sound, previously disinfected, is then carried up into the uterus and note taken of its position, etc., as well as the situation and attachment of the tumor; the frequency of atrophic patches occurring in the walls of the uterus should make the sounding exceedingly circumspect. The uterus is irrigated with a three-per-cent solution of carbolic acid, and

the curetting, accomplished with a sharp spoon, is then begun; on its completion the uterus is again irrigated with the carbolic solution, the patient is put to bed, and the uterus protected from excitants by the use of an ice-bag on the abdomen. If no unfavorable reaction occurs after twenty-four hours, the iodine injection may be made. After preliminary irrigation, a Braun uterine syringe with a long canula, previously filled with iodine and immersed in a five-per-cent carbolic solution, is carefully introduced and brought as far as it will go into the uterine cavity, and then withdrawn about one-half to one cm.; the piston is then very slowly pressed forward until from a half to one gramme of the iodine has been ejected; should pain occur, the injection is at once stopped. The canula is reintroduced in the neighborhood of the os internum, and the syringe made to aspirate the superfluous fluid, or the latter is washed away by a carbolic solution through a Bozeman catheter; the latter cannot be done if the os, as it frequently does, closes in obedience to the stimulus of the iodine. After every injection, a rest in bed of twenty-four hours' duration should follow. If no reaction occurs, the injection may be repeated within from twenty-four to forty-eight hours. The dose of the iodine used may be increased with this and the succeeding injections, the width of the cervical canal being a guide; the canal must be roomy to allow large quantities of the tincture to run out along the canula. In some cases where the injections produced no unpleasant symptoms, he allowed two grammes of iodine to remain in the uterus; the fluid was gradually expelled, with sharp labor-like pains, during the following twenty-four hours. The copiousness of the hemorrhages determined the number of the injections, as did the length and width of the uterine cavity. The smallest number made was six, the greatest from ten to fifteen. When the uterine adnexa were diseased, the injections were practised at long intervals, with the patient keeping the bed and an ice-bag applied over the uterus after each injection. Symptoms of iodic intoxication were not noted. In the cases so treated, there was a decided diminution in the loss of blood at the next menstruation. The first periods after the injections were frequently postponed, sometimes for days, sometimes for weeks, remaining absent altogether in some cases. Sometimes the first menstruation lasted but a day or two. After three or four months, the patient's condition showed the beneficial effects of the diminution in the loss of blood. The pain during menstruation which occurred in some cases was sensibly diminished or removed entirely. Abrasion of the mucous membrane alone appears to be useless. When the injections are faithfully tried and fail to give relief, there is nothing left but the operation of myomotomy.

L. R.

5. Lereh, H.: Contribution to the Diagnosis and Treatment of Carcinoma of the Ovary (*Arch. f. Gyn.*, XXXIV., 3).—Malignant tumors of the ovaries, formerly considered very rare, are now very frequently encountered. The author selected for observation twenty-two from a number of cases of malignant tumor of the ovaries occurring in his clinic. Histologically they presented the features of simple cylinder-cell carcinoma, with greater or lesser implication of the connective tissue; medullary carcinoma was the most frequently present; all originated primarily in the ovary. In 14 cases, the growths were accompanied by cysts in greater or lesser number; the size of the cysts determined the size of the tumor. The cystic portions were mainly made up by a union of the cystic with the carcinomatous elements; less frequently they resulted from softening and suppuration of the carcinoma

itself. It appears, therefore, that carcinoma attacks by preference an ovary already the site of cystic degeneration. The frequency of bilateral growths was also remarked; of the 22 cases, both ovaries were affected in 14; this fact may be of diagnostic utility. The size of the growths varied; if connective tissue predominated, they were small; they varied from the size of a nut to that of a child's and, in two cases, a man's head. The shape of the tumors approached that of a globe in the majority of the cases; in others the boundaries were uncertain and indistinct. The surface was generally finely or coarsely nodulated, depending upon the size of the mass, but several smooth ones were encountered. The consistence of the tumors was either uniformly hard, or alternately hard and soft in patches; the latter being caused by the cystic or softened portions. Firm consistence combined with nodular growth pointed very decidedly toward carcinoma. No etiological factors could be made clear for these cases; of the 22 women, 18 were married and 4 unmarried; 2 were between 36 and 38 years of age; 10 between 42 and 50; 6 between 53 and 57; 2 were 60, and 1, 70 years old. It occurs, therefore, more frequently in later years, during or shortly after the menopause. Other observers generally find the period of greatest sexual activity as the most predisposing time for the development of carcinoma. In most of the cases the onset of the disease was insidious. In almost all cases the patients complained of pain in the abdomen and back, radiating down the legs; this was accompanied by an increase in the size of the abdomen and a feeling of tension, mainly in the umbilical region. After attaining a certain size, the tumors generally develop rapidly. The patients gave as the duration of their trouble the following: 7, from 1 to 6 months; 6, from 7 to 12 months; 5, from 1 to 2 years; 2, 5 years; in 2 the duration was not ascertained. The development of the growths varies; it is only in the later stages, when the tumor rapidly increases in size, that we can obtain positive data upon which to base a diagnosis of malignancy. In rare cases the trouble begins acutely with inflammatory symptoms; a rapidly developed carcinoma undoubtedly may lead to inflammation of the peritoneum.

Menstruation was affected as follows: In 7 cases, it was rendered either more profuse or was diminished, or the discharge continued during the intercatamenial periods, or the blood showed changes in color or odor; in 5 cases, the menses remained absent altogether; in 4, they were unchanged; in 2, no information on this head could be obtained. Disturbances of the functions of the bowels and of the bladder were frequent; they have diagnostic import. Ascites occurred in 15 of the cases; in several, the quantity of fluid reached 20 litres and more. Early occurrence of edema of the legs and labia is of importance; it occurred in 7 cases; in 3, there was edema of the abdomen, and in 1, general anasarca. With the occurrence of edema the patient is in a precarious condition. Metastasis is a very unfavorable occurrence, as an operation is then useless; metastasis occurs frequently and in many situations in carcinoma of the ovary. The surrounding glands are generally the first to be implicated, but the disease quickly traverses to remote structures.

The course of the malady varied; in some, death occurred at the second or third month; in others, life was prolonged for a long period. Metastasis and ascites lead more rapidly to a fatal termination. The malignant nature of the trouble generally discloses itself at the menopause. The differential diagnosis between carcinoma and sarcoma is more difficult: carcinoma occurs more frequently; sarcomata are generally smooth, grow rapidly, are

more movable, and are said to occur earlier in life, nor do they show a tendency to metastatic formation.

The prognosis of carcinoma of the ovary is generally bad; it is proper, therefore, to cut short the ravages of the disease by operative means. While operations for the removal of benignant growths are followed by brilliant results, small success has been secured in cases of malignant character. Of the 22 cases, 8 were operated upon, and of these 8 but 1 made a good recovery. Operations are rendered difficult by the size and by the ramifications of the growths; their removal is at times almost impossible. In the author's cases, the cystic portions of the tumors were punctured, contrary to the advice of good authorities; the punctures were necessary to diminish the size of the tumors. The results of the operations are generally bad, because the growths are allowed to attain too large a size. Early diagnosis and operation offer the best results. In three of L.'s cases, exploratory laparotomy was performed, but with ill-success. Ascites, when great, may be relieved by puncture; if operation is contra-indicated, a nutritious diet and symptomatic treatment are called for.

L. R.

6. Sperling, L.: Two Cases of Triple Birth (*Arch. f. Gyn.*, XXXIV., 3).—The first patient was a healthy woman, 37 years old, who had had nine previous labors. The diagnosis of twin pregnancy was made on admission. Labor proceeded normally; after the birth of the first child, and before an examination of the woman could be made, the second bag ruptured and another child was spontaneously born. While the cord of the latter was being tied, the feet of a third child appeared at the vulva; slight traction was sufficient to expel the child entire. The placenta weighed 1,350 gm.; it possessed one chorion and three amnii, the latter much torn. The lying-in period was perfectly normal; the three children (all females) were suckled by the mother; the third child perished two nights following; autopsy revealed imperforate gut at the junction of the jejunum with the ileum, old perihepatic cicatrices, and hemorrhagic pneumonia of both lower lobes. The first child weighed 1,860 gm. and was 46 cm. long, the second weighed 1,980 gm. and was 46 cm. long, when the patient was discharged.

The second case was 34 years old, had had four previous labors, and had never had any illness; the urine copiously albuminous; pelvis normal; there was great edema of the legs and a pendent abdomen, interfering greatly with locomotion. The membranes ruptured suddenly without any previous pains, followed half an hour later by the birth of a living female; a living male was born shortly afterward; a little later and another child, a living female, was expelled. The uterus contracted well, and about one hour later the afterbirth came away; the whole labor lasted but two hours. The afterbirth consisted of three placentæ adherent together by their membranes; total weight, 1,091 gm.; each placenta had its own chorion. The lying-in state was normal. The children were nourished by the mother and artificially; the first one weighed 1,480 gm., the second 1,980 gm., and the third 1,820 gm.

L. R.

7. Bumm, E.: On the Problem of Further Investigations in the Field of Puerperal Wound Infection (*Arch. f. Gyn.*, XXXIV., 3).—A great advance was made when two varieties of wound infection came to be recognized: *Septic infection*, caused by the entrance into living tissues of known pathogenic organisms, and *putrid intoxication*, due to the absorption by the blood of poisonous chemical substances. Uncomplicated cases of

puerperal sapremia are not infrequent; putrid decomposition of retained placental shreds or blood-coagula, putrid placental polipy, etc., are the most frequent causes. The poisonous matter is taken up by the circulation and produces characteristic symptoms; the germs do not multiply in the blood, but are replenished from the original source; when the latter is removed, fever subsides. It has not yet been explained why the germs do not progress beyond the internal os into the uterine cavity. Winter believes that it is due to the absence in the uterus of a fluid in which the germs could move forwards. B. has in several cases noted the presence in the uterine cavity of a copious secretion, and one which must have been there for some time; but tests made with samples removed showed them to be sterile; fluid is always present during menstruation and the puerperium. B. thinks that the failure of the germs to penetrate further than the internal os is owing to their lacking the power of locomotion, and because various mechanical aids fail them when they reach the internal os. In order, therefore, that retained substances in the uterus should undergo decomposition, it is necessary that circumstances not previously existing must admit the entrance of fungi into the uterine cavity—generally accomplished by the fingers or instruments of attendants, or it may be facilitated by shreds of placental tissue hanging into the vagina, through which the processes of putrefaction may travel to the uterus, or by regurgitation of the germ-laden cervical secretion. Not every bacterium possesses the faculty of exciting putrefactive action. In order to be poisonous, the products of decomposition need not necessarily possess fetid odor. What favors absorption of the toxic substances? The uterus absorbs very rapidly, the vagina much less so and often not at all. Wounds and excoriations undoubtedly facilitate absorption of noxious elements. The pressure under which fluids are retained is of great importance in their absorption. Can putrid intoxication lead to septic infection? Cases of mixed sapremia and sepsis undoubtedly occur. The author thinks it highly probable. In infectious forms of puerperal fever, we have to deal with micro-organisms which actively penetrate the living tissues, which they damage by their increase, and which may so alter the chemical constituents and normal functions of the body as to cause death. They differ in their invasion from the germs of decomposition; the latter never attack living tissues. These organisms are mostly chain bacteria, identical with the streptococci accompanying wound infection. There are two varieties—the streptococcus erysipelatos and the streptococcus pyogenes; the former multiply mainly in the lymphatics and emunctories of the skin and subcutaneous adipose tissues, and produce the symptoms of an acute dermatitis; they do not enter the blood channels or deeper organs; they seldom cause suppuration. The streptococcus pyogenes always excite suppuration; they flourish in the large lymphatics of the system and cause suppurative inflammation of the peritoneum, the pleura, and the joints; they penetrate the blood-vessels and cause metastatic pyemia. Gusserow thought the erysipelatos germs had nothing whatever to do with septic infectious diseases; Winckel believes them to be one of the most potent poisons in producing puerperal fever. B. says that clinical evidence is found in support of both theories, but proves nothing. Bacteriological investigation and experiments upon animals must be invoked in determining the question. The first shows that there is no morphological or cultural difference between the two cocci, and a great number of experiments upon animals made by a host of distinguished observers seem to substantiate this.

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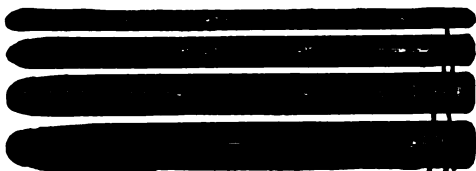
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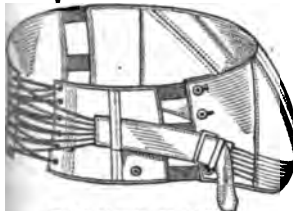
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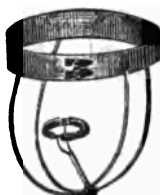
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THE AMERICAN
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VOL. XXII. OCTOBER, 1889. No. 10.

ORIGINAL COMMUNICATIONS.

ICTERUS GRAVIDARUM: REPORT OF A CASE, WITH
REMARKS.¹

BY

H. ILLOWAY, M.D.,

Lecturer on Diseases of Children, Cincinnati College of Medicine and Surgery, etc.

Pregnancy—Development of Jaundice from the Outset—Cirrhosis—Enormous Hypertrophy of the Liver—Cachectic Condition—Gestation Carried to Full Period—Birth of a Living Child with Patches of Deep and Light Green Discoloration over Various Parts of the Body.

MRS. R., born in Germany, aged 24, of fair stature, about five feet, and good physical development; wife of a cigar-maker; in very poor circumstances; married about two years and a half; gave birth to her first child about a year and a half ago. During lactation she was afflicted with acute inflammation of one breast, ending in the formation of several abscesses, which were opened by incision. This child died in the early period of its infancy.

In October, 1875, I was called to see her, as she was not well. I found her living in a back room of a tenement house. She complained of a severe pain in the pit of the stomach—a peculiar pain, which went right through to a point opposite in the back. There were thus two points of pain, one in the back and one in the epigastrium on a direct transverse line, but the point of greatest suf-

¹ Read before the Obstetrical Society of Cincinnati, May 15th, 1889.

fering was in the pit of the stomach. The pain being very acute, I gave her a hypodermic injection of morphia. This relieved her in a very few minutes, and the relief continued for some days, when the pain again returned and was again relieved by a hypodermic injection.

About this time, patient informed me that she believed she was in the family way, as she had missed her menses at the last period.

In a short time the evidences of jaundice became apparent, more marked in the sclerotics than in the skin. Treatment for this was instituted. On account of the information that she might be pregnant, I confined myself to the milder group of remedies, and directed, seriatim and alternately, warm baths; decoctions of rhubarb: nitro-muriatic acid, alone or in combination with rhubarb; baths with nitro muriatic acid; warm rectal injections; blue mass and opium. This last combination controlled, to a considerable extent, the pain above mentioned, though not entirely, as occasionally she would have a severe paroxysm of pain which necessitated a hypodermic injection of morphia for relief from it.

Although in the early period of pregnancy, there was no morning sickness, no vomiting. The appetite was poor, the patient subsisting chiefly on light broths, tea and toast, coffee and toast, a little oatmeal gruel—and these in but small quantity.

At a period corresponding to the third month of pregnancy, the patient had a hemorrhage, as she declared, from the womb, discharging more than half a chamberful of blood which I saw myself.

As the condition of the patient was growing worse—that is, the jaundice becoming deeper, the debility greater—I requested a colleague, now a teacher of obstetrics, to see the case with me.

After questioning the patient closely and carefully noting her condition, he said to me that the patient was suffering with gastroduodenal catarrh, and that this, as it frequently does, had produced the miscarriage—the hemorrhage coming undoubtedly from the womb. He therefore advised me to treat the patient with sharp and active purgation by means of very active cathartics.

For the reason that possibly the woman might have been mistaken as to the locality whence the hemorrhage came, there being a possibility of its having come from the rectum, and for other reasons I do not now recollect, I did not coincide with my colleague either as to the character of the pathological state present or as to the certainty of the miscarriage, and therefore disregarded his therapeutic counsel.

The treatment was continued as before: decoctions of rhubarb with or without nitro-muriatic or muriatic acid, decoctions of ipecac root, baths, rectal injections, and occasionally the blue mass and opium followed by a saline cathartic, *i.e.*, Rochelle salts.

The pain referred to at the outset recurred now at much longer intervals and was always promptly relieved by the hypodermic injection of morphia. This I generally followed up with the blue

mass and opium for a day, then some Rochelle salts, and then a return to the previous treatment.

Except this particular pain, patient complained of no pain or tenderness in any other part of the body.

Palpation of the liver disclosed a considerable degree of enlargement of this organ, but no especial tenderness over it.

Time soon proved that my doubts of a miscarriage, in this case, were well founded, as the evidences of a continuation of the gestation, the increase in size and the rounding out of the belly, became more marked.

But the other symptoms of the patient increased in severity and gravity. The liver continued to enlarge; the icterus became deeper, the patient having an almost coppery tint, a veritable condition of cirrhonosis having become established; the debility was very great, so that the patient passed the greater part of her time in bed; complete anorexia; some insomnia; occasionally a slight febrile movement.

We thus went along until March, 1876. About the early part of this month, the patient, who had become very despondent, asked me if I thought Carlsbad would do her any good. I told her that if there was any possibility of her getting there, the sea voyage and the waters of the springs would be of the greatest benefit to her. She then requested me to draw up a statement of her condition and the advice to go to Carlsbad, with the additional request to have another physician also sign the statement, as she hoped that, fortified with such a document, she would be able to obtain the means necessary for the trip from some distant relative.

I therefore requested Dr. Reamy to see the case with me and then give the patient the benefit of his signature.

At this time, about the sixth month of her pregnancy, she was extremely emaciated. Her whole body was of a dark coppery color, with here and there, both on face and body, streaks of dark and bright green.

The liver was enormously hypertrophied and extended within an inch and a half to two inches of the crest of the ilium. The free borders were bosselated and knotty, so that a suspicion of cancerous disease was aroused in the mind of Dr. Reamy.

The patient went to Europe. On the steamer she was given salt-water baths. The pain in the stomach reaching to the back left her, and her appetite improved greatly. She did not get to Carlsbad, however, it being as yet too early in the season. She went to the home of her parents, where she remained for the period of six weeks. Here, upon the advice of a physician, she took a course of Carlsbad water and continued it throughout the whole period of her stay.

Feeling much improved, she returned to America. I did not see her from the day before her departure, the 18th of March, 1876, till the 13th of June, the same year.

She was then greatly improved. She was much stronger, had gained in flesh, and was very much lighter in color.

On the 13th of June, she was delivered of a child at full term, after an easy labor.

The infant was of fair size and development. The peculiarity about it was that its skin had a deep yellow tinge, and that here and there, on face and body, there were streaks of dark and light green, just as had been observed in the mother previous to her departure for Europe.

Although born alive, it appeared very feeble; its cries were weak and moaning. An attempt was made to give it some sweetened fennel-seed tea, but it did not swallow it. It died on the 15th of June, having lived about thirty-six hours.

The mother got along very well. At long intervals she would have one of those pains already described, but not very severe, which was readily relieved by the pill of opium and blue mass.

In the summer of 1877, she had another severe attack of pain, but this time more of the nature of a colic, and more in the locality of the common bile duct, though the point of greatest suffering was in the epigastrium. I relieved her with a hypodermic injection of morphia and directed her to resume the use of the Carlsbad water. I also directed the husband to carefully examine the feces passed when the purgative effect set in, and see if they contained any gall stones.

On returning after a few days, the husband, a very intelligent and well-read man, told me that he had found one gall stone in the stools of the first day which he had collected and examined—a stone about as large as a hazelnut. He had preserved it to show it to me, but before I came it had been accidentally lost. He was positive that it was a gall stone, and not merely a lump of hardened feces. He had examined the stools after this, but did not find any more.

There was no return of the jaundice. The enlarged liver retracted slowly. Two years after her delivery, in 1878, I again examined her liver and found it extending two inches below the border of the last rib.

She is now in excellent health. She has three boys, the oldest about nine years of age. She has not had a repetition of the jaundice in any of her subsequent pregnancies.

The case just related presents many points of interest.

1. *The Symptomatology*.—The first point that must necessarily attract our attention is the absence of all those phenomena or symptoms that are especially connected with gastroduodenal catarrh.

This is the more singular and the more deserving of attention in view of the etiological prominence given this pathological process in the history of icterus of pregnancy.

Though the epigastric pain, described in the history, might perhaps, at first glance, be brought in connection with such a

catarrh, still a careful consideration of its peculiarities, as described, will show that it bore no relation to such a malady.

This pain is also one of the peculiarities of the symptomatology. As described it is characteristic, pathognomonic, of gastric ulcer; and still, such a condition is altogether out of the question, as the absence of all the other concomitant symptoms of the disease—and they certainly would have appeared in the course of the period of sickness, had it been present—and the subsequent disappearance of the pain, and the continued good health of the patient amply demonstrate.

Neither can it be attributed to the unsuspected presence of gall stones, though the finding of such a one at a later period might lend color to such a presumption, for the following reasons:

(a) The pain was not at all such as is caused by the passage of a gall stone. The pain so produced is of a peculiar character, colicky, and certainly not to be mistaken for anything else.

(b) It was not in the direction and location, as is clearly seen, of the biliary colic.

In view of these facts, the later finding of a gall stone lends no support to such a hypothesis, *i.e.*, the presence of gall stones and biliary colic at the outset.

The occurrence of the gall stone at the very late period in the history of this case can be readily accounted for according to the statement made by Frerichs, that long-continued irritation of the biliary ducts may become an etiological factor in the formation of gall stones.¹

I must confess that, in the absence of other corroborating phenomena, I am at a loss for an explanation as to this symptom.

Another interesting point is the hemorrhage that occurred. It is interesting because decidedly instructive. It is commonly assumed that in the pathological state described in our history a miscarriage must occur, and consequently the occurrence of a hemorrhage is taken as evidence that it has occurred.

That such is not the case is proven by the cases of jaundice of long continuance² that have gone to full term and been delivered of living children. Furthermore, it is sufficiently demon-

¹Frerich's "Diseases of the Liver," chapter on Gall Stones (edition of W. W. & Co., 1879, vol. iii., p. 199).

²Nouv. Arch. d'Obst. et Gynécolog., Jan., 1887, "De l'Ictère chez les Femmes grosses," par Quereil.

strated by our case that even when we do have hemorrhage, this is not necessarily uterine, but may come from the rectum—a phenomenon not unfrequently encountered in various forms of hepatic trouble.

This is certainly of great importance from a therapeutic standpoint.

II. *The Liver*.—The icterus of pregnancy, as generally described, is of two forms:

(a) Simple icterus.

(b) Icterus gravis, or acute yellow atrophy.

In the first form there are no special phenomena. It usually appears in the early months of pregnancy, the first or second, and lasts from two to four months.¹

The second form, known as icterus gravis, occurs most commonly about the seventh month of pregnancy, presents all the phenomena of grave septic infection, and is rapidly fatal.

In the first form, the liver itself is unaltered in size, retaining its normal limits. In the second form, it undergoes the change described in the name, viz., acute yellow atrophy—it is changed in color and greatly diminished in size.

In our case we have a condition of the organ differing from the above types, namely, a hypertrophic state of large proportions.

Hypertrophy of the liver is met with in various diseases and of various forms. We have the simple hypertrophy, the hypertrophy in cancer, the enlargement of the amyloid liver; but none of these need be considered here, as they are excluded by the history of the case.

The only two forms of hypertrophy that demand our attention, in the discussion of the question as to what form of hypertrophy confronted us, are:

1. Hypertrophy from retention, from obstruction of the common duct—biliary cirrhosis.

2. Hypertrophic cirrhosis with icterus.

It is well known that complete obstruction of the common bile duct and consequent retention of bile may give rise to a cirrhosis with hypertrophy, known as biliary cirrhosis. It is also a well-demonstrated fact that where the obstruction is but

¹ "American System of Obstetrics," vol. i., p. 425. *Nouv. Arch. d'Obst. et Gynécol.*, loc. cit. Murchison ("Diseases of the Liver," edited by Brunton and Fayrer, 1885) says it usually occurs in the later months.

temporary the hypertrophy is scarcely noticeable, and only where it has become permanent does the liver in course of time take on a marked enlargement. According to Wickham Legge, this enlargement, at its maximum, does not reach an extent of more than three fingers' breadth beyond the border of the ribs, and never attains the size that we find in amyloid degeneration or in hypertrophic cirrhosis.¹

The causes of such obstruction, as described in the last edition of Murchison, "The Diseases of the Liver," are calculi impacted in the duct or a tumor pressing upon it externally.²

The history of our case negatives, in my opinion, therefore, any assumption of biliary cirrhosis as the form of hypertrophy presenting in our patient. We have no history of biliary calculi at the outset, and certainly none of tumor.

It might, however, be objected that possibly another cause may have been active here, for Prof. Virchow has demonstrated that, under certain circumstances, the catarrhal swelling of the epithelium lining the mouth of the common duct may assume such proportions as to completely occlude the passage, and we might thus have had biliary cirrhosis produced.

Against this it can be maintained with perfect safety that, had any such catarrhal swelling of the epithelium of the duct occurred, it is certain that in the long period occupied in the complication—over seven months—such further pathological changes would have occurred as to preclude any thought of further recovery. That such recovery did occur is conclusive evidence against any assumption of complete obstruction of the bile duct and consequent biliary cirrhosis.

Furthermore, the difference in size in the hypertrophy of our case and that occurring in biliary cirrhosis as laid down by Wickham Legge is of itself a powerful argument for the exclusion of this form.

There remains, therefore, but the second form, namely, hypertrophic cirrhosis with icterus.

The marked jaundice, the cachectic condition, the enormous size attained by the liver, argue in favor of this being the pathological form of the liver that presented in our case.

Though it is true that some of the characteristics of this form

¹ "Dictionary of Medicine," edited by Quain, p. 884.

² Murchison, edited by Brunton and Fayer. Quain's "Dictionary of Medicine," loc. cit.

of hepatitis are lacking here—namely, the symptoms of hepatic inflammation, the pain in the region of the liver, the smooth border ascribed to it—still, in so far as but comparatively few cases of this form of hepatic trouble, since its recognition, have been described, the absence of these and the contrary condition of the border, in the case here recorded, cannot be brought up as proof contra.

Furthermore, the 'pathological anatomy of this form of hypertrophy, as described by Charcot and Thierfelder,' argues in favor of bosselated and knotty border as being one of the possibilities of the disease, by the accumulation of bile in the minute biliary ducts and multiplied biliary canals, or by the more marked development of the hyperplasia in certain portions of the organ than in others—an occurrence not strange in the history of pathological anatomy.

If this argument be logically correct, we have, as one of the most interesting features of the case, the fact that a hypertrophic cirrhosis with icterus may constitute one of the complications of pregnancy, and, furthermore, that under favorable conditions the gestation need not be interfered with, and that at its termination the organ may return to its normal state.

III. *The Etiology*.—The causes usually assigned for this complication of pregnancy are either a choledocitis—the result of a gastro-duodenal catarrh—or a hepatic congestion from pressure of the gravid uterus.¹ But these cannot be invoked in our case.

The absence of all symptoms that respond to a gastro-duodenal catarrh precludes the supposition of the first cause. And not this alone, but the subsequent restoration of the liver and ducts is a most powerful argument against any such etiology; for had a choledocitis existed and had such long duration, it would certainly have resulted in a permanent occlusion and rendered recovery impossible.

The early period at which the jaundice appeared does not permit of the hypothesis of hepatic congestion from pressure upon the abdominal vessels by the gravid uterus. This conclusion is still more strengthened by the absence of all subjective sensations on the part of the patient, as weight, dull pain in the region of the liver—almost unfailing symptoms in hepatic congestion.

¹ *Le Progrès Médical*, 1876, p. 655. "Ziemssen's Cyclopaedia," vol. ix.

² "American System of Obstetrics," vol. i.

Moreover, it is very questionable whether the two causes above mentioned are truly, as has been said, the etiological factors in all cases or even a majority of them.

It is a fact that the majority of cases that are reported have come under observation at a period more or less remote from the initiation of the complication, and it is not unreasonable to suppose that in many cases the etiological factors have been merely assumed from the general facts that jaundice follows gastro-duodenal catarrh and occurs from hepatic congestion, and not deduced from symptomatic evidence observed.

What, then, may be the etiology?

Charcot, in his lecture on "Hypertrophic Cirrhosis with Icterus," speaking of the peculiar initial lesion, says: "Why this limitation to the small canaliculi, and by what influence is this produced? Must we invoke an initial alteration of the biliary secretion, entailing, as a consequence thereof, a lesion of the parietes of the most minute excretory canals? We do not know."¹

Thierfelder, in speaking of this form of cirrhosis, says that it is usually caused by alcohol, and that this most probably produces a change in the biliary secretion, giving it an irritant character, and this gives rise to the peculiar pathological changes that characterize this form of hepatic trouble.²

Now, it is well established that we may have cirrhosis in patients not at all given to alcoholic drinks, and this was the case in our patient. We must, therefore, assume that other matter circulating in the blood, or that blood of a peculiarly altered condition, may give rise to such changes in the biliary product as to cause the subsequent interstitial hepatitis.

If this be true, we find sufficient reasons to account for such a change in the blood of our patient in her previous history.

She was, firstly, afflicted with a suppurative mastitis; then she was poor, very poor, and had not the means at command requisite to a restoration to the normal of her system. Her food was poor and insufficient, and her hygienic surroundings very bad.

It would, therefore, not appear far-fetched to believe that the etiological factor lay in a vitiation of the blood.

This position is still further supported by so eminent an authority as Prof. Ernest Ziegler. In the last edition of his

¹ *Le Progrès Médical*, 1876, p. 655.

² "*Ziemssen's Cyclopaedia*," vol. ix.

"Handbook of General and Special Pathological Anatomy," 1887, treating of diffuse indurating hepatitis, he says: "Diffuse chronic indurating hepatitis is most frequently a hematogenous process, although it may also occur from changes produced in the biliary ducts, and is then designated as biliary hepatitis. As to the causes producing the disease in every individual case, we can, in so far as concerns the hematogenous process, say but very little that is positive. It is possible that substances reabsorbed from the intestines are the causes of this process. By many authors alcohol is placed in the list of etiological factors."¹

According to this explanation, the question would naturally arise as to the part played by pregnancy in the production of this complication in our case.

To answer this positively I should certainly be at a loss, for the complication set in at so early a date that it is really difficult to say whether it had any part therein or not.

It may be that the supervention of pregnancy produced such conditions as prevented the proper elimination of the irritating material already in the system,² or even its partial elimination, and thus it accumulated and the hepatic trouble was produced.

Or it may be assumed that pregnancy produced such further changes in the blood and caused the development of the peculiar materies morbi necessary to the development of the hepatic malady. That pregnancy has such a predisposing influence is demonstrated by the history of *icterus gravis*—an affection which cannot be attributed to the causes above mentioned, and which, judging from its septic manifestations, must be due to a marked vitiation of the blood.³ Out of twenty-two cases of this disease observed in females by Frerichs, one-half (eleven) occurred in pregnant women.

If this view be correct, the question may be asked whether it could not be properly assumed that an alteration or vitiation of the circulating fluid, produced either previously or during

¹ Ziegler's "Handbuch der Allgem. u. Spec. Pathol. Anatomie." Jena, 1877. Vol. ii., "Specielle Pathol. An.," p. 585.

² See Nouv. Arch. d'Obst. et Gynécol., Jan., 1887, p. 19 ("Ictère chez les Femmes grosses"), referring to the opinion of Prof. Peter: "Une partie des matériaux ternaires n'est pas éliminée suffisamment vite, et s'infiltré."

³ According to some authors, this disease is due to imperfect oxidation of blood; according to others, imperfect elimination of cholesterin or of biliary acids. See preceding note.

pregnancy, is, in very many if not in most cases, the true etiological factor of this complication.

This assumption is supported by the fact that the cases of icterus in pregnancy recorded have been chiefly observed in hospital patients, a class of people enduring hardships and privations, and living under miserable surroundings, and in whom a vitiation of the blood readily occurs.

Should this view of the etiology of pregnancy be verified by further and careful observations—from the outset to the termination—we would have an explanation as to the mode of production of many cases which cannot possibly have been produced by the etiological factors mentioned at the outset, and which M. Hervieux has denominated, evidently for want of a better explanation, the protopathic icterus of pregnancy.¹ We would have an etiology applicable to both the simple and graver forms, and obtain, perhaps, therefrom valuable indicia as to the prophylaxis of the complication and its cure.

IV. *The Infant*.—The facts established as regards the fate of the infant in this complication are as follows: Lomer, who carefully investigated this point, found that out of fifty-seven cases which he collected, forty-five were still-born.

Out of sixty-two cases collected by him, the infant was icteroid only in six.²

Quereil³ has lately reported seven cases, out of which five only are considered here; the two others being excluded on account of previous histories, one of pre-existing cancer, the other of pre-existing hepatic hypertrophy.

Out of these five observations, the infants were delivered alive and at full term in two. In one case the infant was born alive, but prematurely, and succumbed on the fifth day. In one case the infant was born dead prematurely at seven and a half months. In one case premature delivery at seven and a half months, infant born asphyxiated and succumbed in twenty-four hours.

As to the color of the infant, it is stated in observation one that the infant was icteroid; also in observation seven—the case excluded from consideration owing to a history of hepatic hypertrophy of five years' duration.⁴

¹ Nouv. Arch. d'Obst. et Gynécol., loc. cit.

² "Amer. Syst. of Obst.," vol. i.

³ Nouv. Arch. d'Obst. et Gynécol., loc. cit.

⁴ Nouv. Arch. d'Obst. et Gynécol., loc. cit.

It is remarkable, in the case reported here, that, though the jaundice was so great as to have constituted a veritable cirrhosis, the child should have survived to the full period, whilst even in the cases of mild character and comparatively short duration the child dies in utero.

It is true that Quereil observed a case of similar long duration in which the infant survived to the full period, but in his case the jaundice was not by far what it was in our case, nor was there that disturbance of the general system during the period of gestation, so far as can be gathered from the history, that was present in ours. In his case, all the grave manifestations set in after delivery.

But what is a still more interesting feature is this: that not alone was the mother affected by this complication, but also, through her, the infant, and that markedly, as shown by the deep green discoloration; and still, despite the great intoxication of the blood, the infant survived to be born alive. In the cases collected by Lomer, all the icteroid infants died in utero and were thrown off prematurely.

In the first observation of Quereil, already referred to, the infant, although icteroid, was born alive and at full term.

The question of greatest interest to me, however, is this: The infant was apparently well formed and fully developed: it survived the period of greatest gravity in the complication that occurred during its gestation, the period of greatest disturbance in the general economy of the mother, and was born at full period, only to die two days later; what was it that was the cause of death?

It certainly was not anything that occurred during labor, as the woman was a secundipara, well formed, and her labor was comparatively easy.

It might be answered that it was the blood in its body that had been so vitiated that life with it was impossible. To this, however, it might be objected that, if this were true, how came it that the child, whilst in utero, continued to thrive and grow upon this same blood?

The only answer that I find to this question is this: that the blood had not vitality enough, not stimulus enough, to rouse into action the organism under the new conditions of life it was placed in after birth. Or it might be said that, though it is true the blood was vitiated, still the whole volume of the mother's

blood, filtered, as it was, through the placenta, was sufficient in character to permit of life and to provide nutriment for the infant, but that when thrown upon its own volume of blood, and that alone, the vitiation of the small volume was too great to permit of life continuing.

V. *The Therapeutics.*—I will not delay with a discussion of the therapeutics of this case; I only desire to call attention to one point, namely, that whilst the patient remained at home under the baneful influences prevalent there, she grew worse despite all medication; but that as soon as she started on her sea voyage, which brought her out of her surroundings, gave her plenty of fresh air, the invigorating sea breeze, her general condition grew better and continued to improve.

Undoubtedly the Carlsbad water had some beneficent influence in this improvement, but I am inclined to believe that the greater share in her recovery must be attributed to the ocean voyage, and the fact that she was then better cared for and better provided for than at home.

And it seems to me that the fact just brought out is a strong argument in favor of the etiological view advanced by me.

A COMBINED RECTAL AND INTRA-UTERINE IRRIGATOR.

BY

JNO. S. COLEMAN, M.D.,
Augusta, Ga.

(With woodcut.)

IN the *Medical Record* for May 10th, 1879, I presented to the profession the metro-clyst as a ready and safe means of using tincture of iodine in cases of hemorrhage after abortion.

In February, 1885, through the columns of the *Journal of the American Medical Association*, I published a description of a modification of this instrument which made it available for the diseases of the rectum and surrounding pelvic structures.

Its flat, round end has been a bar to its easy introduction through the sphincter ani; therefore I suggested to Mr. Stohl-

mann, of Geo. Tiemann & Co., to make the distal extremity conical.

This change makes the instrument, for the uses for which it was designed, *perfect*.

It is of hard rubber, and consists of a cylindrical frame or cage traversed by a central tube. This arrangement insures the easy exit of the injected fluid.

Any ordinary syringe can, by means of rubber tubing, be attached to it. (My preference, in the use of hot water, is for the siphon.) I have had most gratifying success from its use in cases of rectal ulcer and in several cases of puerperal endometritis. So far as I am informed, Dr. J. R. Chadwick was



the first to advocate the rectal use of hot water in the treatment of pelvic inflammations (Trans. of the Am. Gyn. Soc., 1880). With the irrigator any amount of water can be used without producing a painful distention of the intestines. Thanks to the genius of Dr. T. A. Emmet, we all now appreciate the indispensable value of hot water in inflammation and as a hemostatic.

DYSPAREUNIA CAUSED BY A RARE INJURY OF THE HYMEN.

BY

PAUL F. MUNDE.

(With plate.)

It was formerly supposed that the hymen was destroyed by the first coition, and that all that remained of it after that event was a fringe of small tabs of skin known under the fanciful name of "carunculæ myrtiformes."

Carl Schroeder first demonstrated the falsity of this view, and showed that the hymen is not *destroyed* by the first successful coitus, but is merely *torn*, and that, for some years at least.

its flaps remain so perfect that they can readily be brought together by the examining fingers, and the integrity of the hymen thus be apparently entirely restored. Only after a lapse of years, often not until the atrophic changes of the menopause have exerted their influence, do the hymeneal flaps shrivel and gradually disappear.

The defective knowledge on this subject which still exists among the profession here and there, was made clear to me some years ago by an assertion which I heard made by a prominent physician in a Northern town, who maintained that the flaps of the hymen could not remain so preserved that two weeks after the injury of the organ by sexual intercourse they could be put together and the hymen be made to appear perfect; and that, therefore, the charge of a young woman in his town who accused a man of having violated her, and who committed suicide two weeks after the alleged violation, could not be true, because the flaps of the hymen were found at the autopsy to be in such a state of preservation. How important a bearing this point might have on a similar case in a medico-legal sense is obvious.

Having shown that the hymen is merely torn by coition, Schroeder further demonstrated that it is actually destroyed by the overdistention of the vaginal orifice during parturition, and the superficial sloughing and physiological involution of the parts usually following that process. Only a few small nodules of skin ordinarily remain at either side of the upper half of the vaginal orifice to show where the sign of virginity once existed.

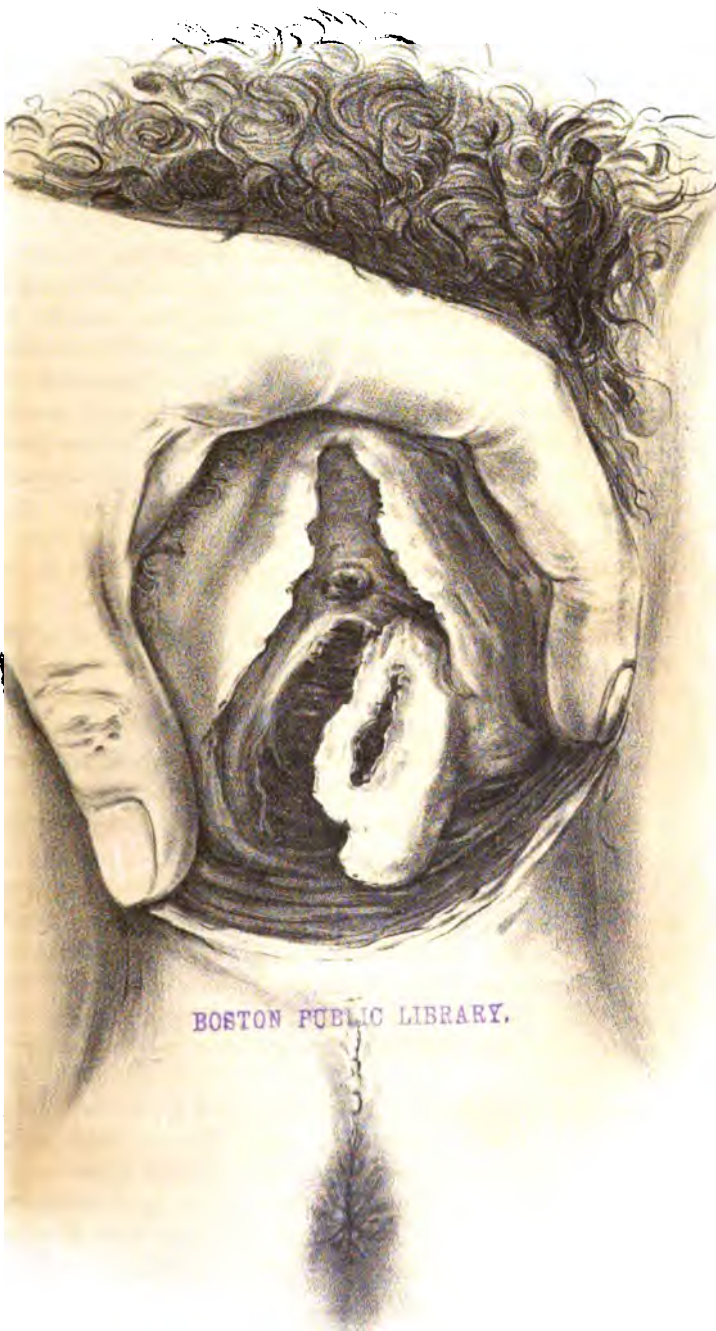
The usual site of the physiological lacerations of the hymen is on either side of the posterior commissure, the rent on one side being usually deeper than on the other. Next come two rents on one side, one above and one below, finally one rent on each side near the upper border of the membrane. Occasionally these rents may bleed very freely, a small arterial branch being torn. I have seen one such case, and one other of laceration of the vagina by the first coitus, both requiring rapid and active measures to prevent further loss of blood. The shape of the hymen and of its orifice will naturally largely determine the site and direction of the lacerations. A small circular opening will probably involve a stellate laceration, two rents on one side and one on the other; a semilunar hymen, one rent on

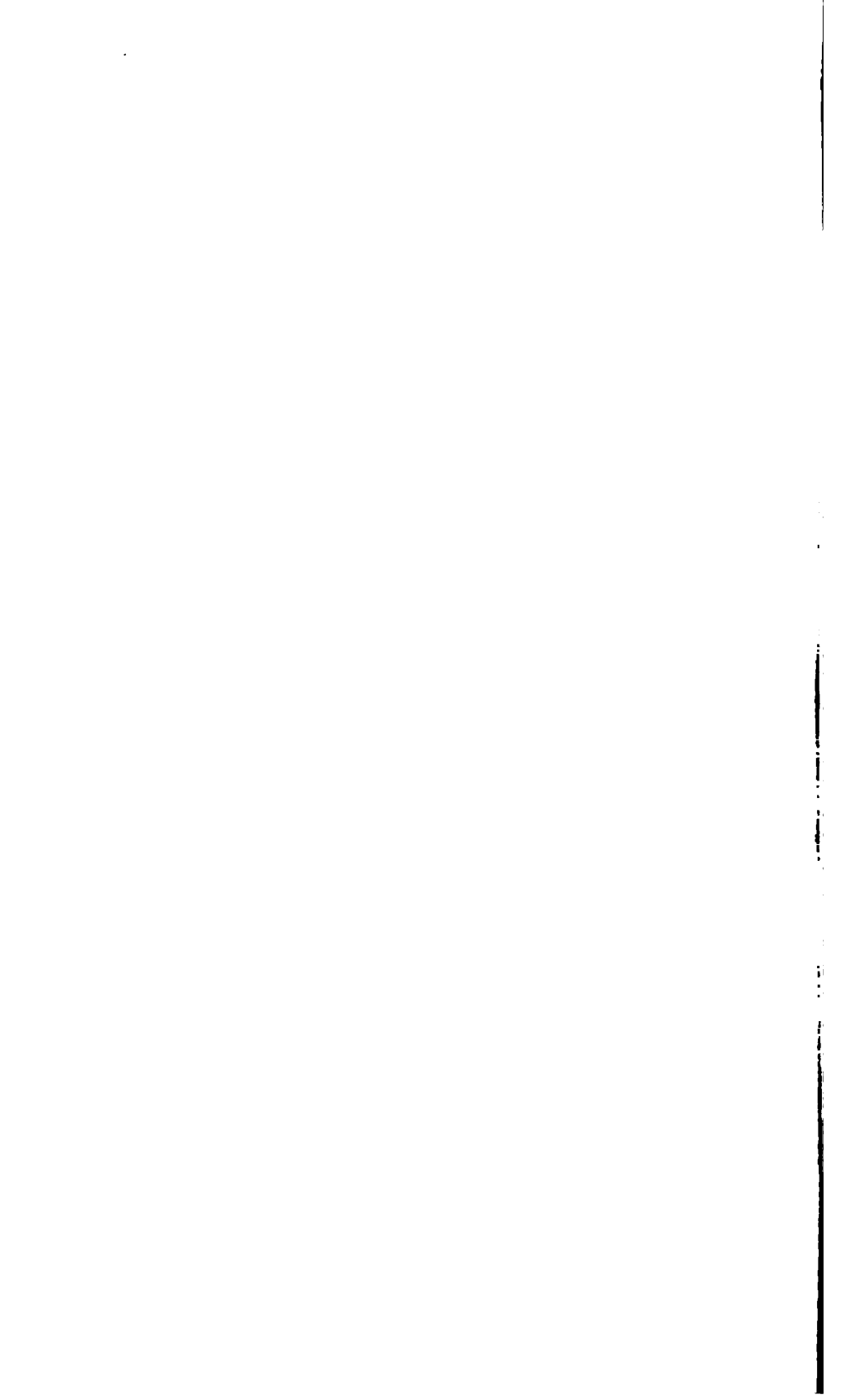
either side of the posterior commissure, etc. A thick, fleshy hymen will leave large tabs of skin, a thin hymen small nodules. A hymen very firmly attached at its periphery will naturally be torn from its orifice outward. A hymen with a small circular opening surrounded by a sharp, tendinous border, and growing thinner towards its periphery, may be torn away more or less from its attachment while the central opening remains intact.

After Schroeder, Budin made special investigations of the hymen and its injuries, and to the papers of both these gentlemen is to be attributed to some extent the practice which I adopted years ago of invariably inspecting and examining the hymen and vaginal orifice, whether intact or lacerated, in order to perfect my knowledge of the signs of virginity, nulliparity, or pluriparity. In this way I met with many curious malformations and lesions of that part of the female body, an acquaintance with which has been of some practical utility to me. And thus I detected the very peculiar and unusual lesion of the hymen of which I here present a plate, drawn for me from the subject by Dr. H. Macdonald.

The patient was a woman of about 40 years, the mother of a number of children, who came to my service at Mt. Sinai Hospital during the past winter for a uterine fibroid. The anomaly of the hymen was discovered at the first examination. Nothing could be elicited from the woman about her sensations during early sexual life. The hymen, as is evident, was torn bodily away from its attachment to the posterior, right, and upper border of the vaginal orifice, and hung loosely by a bridge of skin less than half an inch wide, to the left upper margin of the vestibule. It could be lifted up over the mons veneris and replaced to its original attachment. The central aperture was intact and admitted the first joint of the index finger. Coition and parturition had evidently taken place readily underneath the pendulous hymen, which hung over the vaginal orifice like an apron.

One other precisely similar case came under my observation in a private patient about two years ago—a young nullipara, who consulted me for sterility. The hymen also remained attached by the left upper border. This lady was intelligent enough to remember that the first attempts at coition (she had been married only three years) were very painful and attended





by considerable hemorrhage, both of which symptoms soon ceased, and coition now is painless. For obvious reasons I could not have a sketch made of this case.

My attention was first directed to this peculiar variety of physiological injury of the hymen by a case reported in a French medical journal some years ago. The reporter, a Swiss physician, was consulted by a young woman on account of severe pain during sexual intercourse. Her story was that several years before, having occasion to take a lover, during first connection she suffered severely and lost considerable blood; this repeated itself during several subsequent attempts, in none of which complete intromission of the male organ was effected. Finally, however, the lover succeeded in inserting his whole penis, and pain and hemorrhage ceased. Shortly before consulting the doctor, she changed lovers, and at the first attempt with the new-comer the same old pain and bleeding occurred, and persisted on several subsequent occasions. Hence she decided to consult a physician. An examination showed the vaginal orifice covered by the hymen, which was completely detached except near the symphysis pubis, where a small bridge still preserved the vitality of the membrane, and a small circular opening, admitting one finger, with firm but elastic border. Underneath this loose hymen the vaginal orifice was roomy and capacious. Inserting the finger into the hymeneal opening, and sharply pushing the hymen upward into the vagina so as to stretch its sole remaining attachment, the girl complained of the pain as identical with that experienced during coition. The physician's explanation of the case was the following: The first lover's penis, being too large to penetrate and tear the central opening of the hymen, gradually tore the membrane from all its attachments, causing much pain and bleeding; but once the hymen torn loose and only hanging by one small attachment above, the penis readily entered the vagina underneath it, and all pain and bleeding ceased. Lover No. two, however, had a small penis, and, not knowing by experience the proper direction to take, his glans was caught in the small central orifice of the hymen and the old symptoms were reproduced. The reporter naively adds that, unless the obstacle were removed, the lover would run the risk of carrying off the hymen on his glans, as a knight of old bore off a trophy on his lance. To avoid such a dire result, the doctor decided to remove the

offending hymen, which he did by tying and cutting off the narrow attachment.

In my two cases there was no occasion for such treatment, since the malformation produced no symptoms.

I have produced the plate and narrated the cases merely as curiosities, and possibly with the hope of interesting those of the profession whose practice gives them opportunities, in the observation and study of the hymen, present and past, and its injuries.

STERILITY IN WOMAN: ITS ETIOLOGY AND TREATMENT.

BY

E. S. McKEE, M.D., Cincinnati.

It is only in rare instances that the lack of descendants is not sooner or later regretted by both husband and wife, and it often proves an open door to marital discord and reproaches with all their evil consequences. Sterility among the old Romans and Israelites was sufficient cause for dissolution of the marriage relation. Instances of human sterility due to want of sexual harmony are exceedingly rare, and most cases supposed to be of this nature can be otherwise explained. The etiology of primary sterility is often "shrouded in darkness," and the successful treatment of the same past finding out.

Sterility in man must necessarily be eliminated before we can hope to discover the source of unfruitful marriages in woman. Gross has proved that man is not able to beget children in almost all instances, as formerly believed. His statement that one case in six is due to sterility on the part of the male is probably too strong, yet it is not greatly wide of the mark. Kehrer, after a series of carefully conducted experiments, has arrived at the conclusion "that in at least a third of the cases of sterile marriages the husband was the party at fault, and gonorrhea the cause of the barrenness."

The most frequent origin of sterility is, perhaps, intra-uterine disease, and chronic endometritis is its usual manifestation. This disorder gives rise to the characteristic gelatinous discharge, thus hindering the ingress of the spermatozoa by destroying

their vitality. Endometritis renders the mucous membrane unfit for the fixation and development of the ovum. This diseased condition of the intra-uterine mucous membrane may extend into the Fallopian tubes and obliterate their orifice, so as to prevent the admission of the spermatic fluid. It is well known that constitutional causes, more especially the scrofulous diathesis, have much to do with these inflammations; also cold and heat, overfeeding and underfeeding, youth and old age, decline of general health, and confinement.

Diligent study of the subject of sterility demonstrates that inflammations of the pelvic peritoneum and of the parametria, or rather their consequences, are among the most frequent causes of sterility.

Anatomical researches often find such considerable adhesions between oviducts, ovary, uterus, and rectum that conception would be an absolute impossibility; yet other adhesions exist which might not prevent impregnation.

Three questions are to be determined: (1) Are spermatozoa in the semen? (2) Do they get into the utero-cervical canal? (3) Do the secretions in the canal poison the spermatozoa?

Levy, of Munich, made microscopical examinations of the condition of the spermatozoa, at different intervals after coitus, in sixty women who were under treatment for sterility. In fifty-seven, catarrh was present. In all of these cases, only a small number of spermatozoa were found within the uterus, and they were all motionless within five hours after coitus. In healthy women he had found that the movements of the spermatozoa within the uterus continued for at least thirty-six hours. It is probable that if the secretions are normal the spermatozoa can make their way into the uterus in spite of flexions or stenosis.

Physiologists tell us that the healthy spermatozoid in a normal vagina may live and retain its vitality for 7 or 8 days; that its lateral diameter is $\frac{1}{4300}$ of an inch, and that it will be able to penetrate any orifice through which a red blood corpuscle can pass. Its rate of travel is about $7\frac{1}{2}$ inches an hour, 16 feet in a day, and 30 or 40 yards in its lifetime. These facts would lead us to doubt if long or narrow, or ante- or retroflexed, cervixes could primarily have anything to do with sterility, and to conclude that the condition of the secretions has great influence.

Vulvar or vaginal hyperesthesia, inflammation of the carunculae myrtiformes, undue shortness of the vagina, unless great

care is exercised by the husband, will induce dyspareunia and may bring about sterility by favoring the formation of a copulative sac outside the axis of the uterine canal, and consequent misdirection of the semen.

Infantile uteri and other malformations are frequent causes. Malformations of the vaginal portion often prevent conception in women as well as in animals.

A Chicago professor stated in a clinical lecture that his observation had been that, in sterile women, the hair on the mons veneris was always straight. That curling the hair would cure the sterility was not demonstrated.

Premature and post-mature marriages tend to sterility.

The infertility of heiresses is well known, and, if inherited sterility be not a contradiction of terms, this fact demonstrates its possibility.

The female being less passionate than the male, the orgasm results later with her, or the male orgasm occurring so soon she may not reach that stage at all. If both were simultaneous, it is reasonable to suppose that conception would be more liable to occur.

Obesity is especially regarded as a potent factor in sterility, and the state of the nutrition in women, as in plants and animals, has long been known to have this tendency. The connection between sterility and obesity has been explained by some as the result of the direct pressure of the fat upon the ovaries. The more plausible theory is that the extensive disposition of fat detracts from the developmental process in these organs. The interference with menstruation often observed in fleshy persons bears out this theory. It is probable that the ovaries are not organically affected by this condition, as the normal menstrual flow generally returns when the obesity disappears. Examination of the ovaries under chloroform in obese persons will show these organs intact, so it is probable that sterility is indirectly caused, in this condition, through the hindrance to the expulsion of the ova, and not their development. The injurious influence of excessive flesh in women, as regards child-bearing, is universally admitted, and is corroborated by experience with plants and the lower animals. When obesity attains a condition of polysarc. it has a great influence on generation. In the male, its early development checks the growth of the genital organs, and, if late, diminishes sexual desire. The accumulation of fat in the

abdomen is claimed by some to exercise an injurious pressure on the utero-ovarian apparatus.

The hypertrophied condition of the external genitals may form a mechanical hindrance to impregnation. Given an obese woman, we will generally find that the prospects of offspring will depend more upon the menses than upon the amount of fat, amenorrhoeic fat women being usually sterile. Statistics show a diminished fertility during famine, but it is only ephemeral. Thinness only affects fertility when it is dependent upon some chronic disease.

The luxurious habits and overfeeding of the wealthy diminish fertility, while this condition is favored by the life of the poorer classes. The relative fertility is stated by Marshall Hall as six to one.

Chlorotic women often conceive, and sterile women just as often show no other cause for their sterility than chlorosis. Scrofula—probably by its effect on the general system, leading to deficient development of the entire body, genitals included—may be productive of sterility. Tuberculosis is probably, in all except its later stages, without influence on sterility in women. Alcoholism is considered a cause of sterility. It evidently does diminish sexual potency in the male, and for this the female is often blamed. By causing general constitutional disorder and a chronic inflammation of the ovaries, it probably does occasion a certain amount of sterility. Yet we see numerous instances of parents, addicted to the abuse of alcohol, who have large families of very ragged children.

Carcinoma cervicis uteri is an important obstacle to conception. When the growth has advanced to any degree, even if confined to only one wall, the cervical canal is mechanically stopped, and the corrosive fluid which accompanies ulceration has a deleterious effect upon the sperm.

The higher education of women has been held to be a factor in the production of sterility. However, the experiment is one of rather too recent date to be of much certain value.

Ovulation is doubtless more frequently performed in some women than in others. Some conceive with more or less regularity every fifteen or eighteen months, and others at intervals of several years.

Dysmenorrhœa among the fertile is comparatively uncommon. Nearly half of the sterile women suffer from dysmenorrhœa.

The association of this neurosis with sterility is not unimportant. We often also have the return of semen and derangement of sexual orgasm or coitus, and the cure of the dysmenorrhea is a direct step towards the cure of the sterility. Some claim that two out of five cases of sterility are accompanied by spasmodic dysmenorrhea. Emmet, in his tables, shows that of all married women who suffered pain during menstruation at puberty, seventy-one per cent were sterile.

Venereal diseases have their share of influence, and the gonorrheal affection is a potent cause of sterility. It is by no means proven that syphilis has any unfavorable influence on conception, though the frequent abortions due to this or other causes may have this effect. Syphilis is often associated with gonorrhea, which is the real cause. Gonorrhea often prevents conception by the inflammation travelling up the womb along the Fallopian tubes, which renders the covering of the ovaries thick and tense, so that the ovum cannot escape, or, if it does, the fimbriated extremity of the tube is so agglutinated that it cannot rise up to grasp the ovum. The extreme view of Noeggerath, that the wives of men who have had gonorrhea as a rule remain sterile, has not been extensively accepted by the profession. The truth is, if gonorrheal salpingitis results, sterility is the consequence.

Reflux of semen after coition was described as a cause of sterility by Hippocrates and Soranus, and is probably a frequent origin, though many women must base their complaints on a delusion. This profluvium seminis is rarely complained of except by the sterile, and is infrequent among the fertile. It is also believed to be common among those sterile women who have no sexual pleasure. It is probable that the mucous discharge of the glands of Cowper and Duvernay is in some cases mistaken for semen.

The vaginal secretions under certain pathological conditions become so acid that they induce sterility. Women who suffer from severe vaginal catarrh are frequently sterile, the spermatozoa being found dead in the vagina some hours after copulation, though examination a shorter time afterward revealed them still alive. This vaginal secretion, the *materii peccans*, may also act in a mechanical way. In cases where conception occurs despite a very acid condition of the vaginal secretion, it is probable that some of the spermatozoa enter the uterus before the

secretion has time to act on them; or possibly, the spermatozoa being injected in a mass, the acid secretion is unable to penetrate and kill all.

Sexual incompatibility is well known to exist, prominent examples being Augustus and Livia, Napoleon and Josephine. A case is reported by Duncan where a man married successively three childless widows and had children by each, and another where a woman is married during child-bearing limits to three men successively, and has children by but one of them. Sterility from sexual incompatibility cannot be foreseen or prevented, and religion, morals, and law interdict the cure which might result from a change of husband. Among some classes in Wales and Scotland, for instance, custom permits and local morals do not condemn a practice which produces many illustrations of this mutual incompatibility. This practice is called "bundling" or "keeping company," and consists in permitting young girls to cohabit with an eligible man, with the understanding that if pregnancy ensues the legal marriage tie is made. Progeny not resulting, the woman is deserted by her friend and falls to another, with whom the result may be different. Want of sexual unity, the so-called relative sterility, is the condition in which long and regular cohabitation between two individuals remains without result, though each one can procreate with other persons. Some long sterile marriages are dissolved, and both man and woman produce children in another union.

Duncan has found that relatively more women who marry between the ages of 15 and 20 are sterile than those who marry after 20.

Sexual sensations, lack of participation or feelings, seem to have no special influence on conception. Many women who have no passion conceive rapidly, others who have may not conceive at all. Dyspareunia and frigidity do not play an important rôle in sterility, though they doubtless have a bearing in some cases. Among prostitutes, the frequent delay of menstruation, then abundant hemorrhage, is in many cases only habitual abortion, and leads to changes in the genitals which must result in sterility. The effect of nervous or psychic influence on sterility through its suppression of menstruation merits further investigation.

The Druidic College of the twelfth century considered tannin a most potent cause of sterility, hence excessive tea-drinking

might act in the same way. Sulphur is also believed to have the same effect.

Such dislocations of the cervix may occur that instead of lying in a pool of semen, as it should, it is above, in front, or away from it, and this may prevent conception. Sterility can be occasioned, when necessary, by obliterating the uterine extremities of the Fallopian tubes with the thermo-cautery.

The universal prolificness of the human race in Arkansas is well known. When you ask down there why they have so many children, they reply that the mosquitoes are so bad that they cannot sleep at night. That mosquitoes are a stimulant to reproduction is hardly proved, but that they act indirectly is firmly believed in Arkansas.

Mantagazza, Budin, and Balley wrote that consanguineous marriages tend towards sterility. Darwin, after a most careful investigation, using as his guide Burke's "Landed Gentry" and "Peerage," finds that consanguineous marriages are slightly more fertile than non-consanguineous. He is of the opinion that this is because marriage between first cousins is more apt to take place when there is a large group of persons who bear this relationship to each other, and thus fertility becomes hereditary. The alleged infertility of consanguineous marriages cannot be substantiated.

TREATMENT.

The cure of sterility is not the easiest and most encouraging task in gynecology. Our imperfect knowledge of the etiology of the condition is one of the first and greatest difficulties; yet in this, as in many other troubles, the treatment consists in the removal of the cause. Our knowledge of sterility has grown with our progress in gynecology, but the growth is not satisfactory, because it rests on no sure foundation. Logic here, as in many other departments of therapeutics, has not been closely followed. *Post hoc* and *propter hoc* have been confused. A coincidence has too often been considered a consequence; for in the present age, as in the past, the reputation of remedies is based more upon faith than upon evidence. We should understand the nature of the trouble in hand, and the remedies to combat it, then place a limit to our faith and expectations.

Vaginismus should receive that constitutional treatment indicated in all nervous and hysterical disorders, and will often yield greatly to simply stretching the vagina and pubic nerve.

Women addicted to the use of alcoholic stimulants have been known to become pregnant on the adoption of habits of teetotalism.

Fevers have been known to be followed by relief from sterility. The philosophy of this cannot be explained, for fevers are known to disorder the ovarian and uterine functions. They probably result in some change of the general health, and perhaps prolonged continence has an influence.

Duplexity of the vagina, interfering with cohabitation, may be a cause of sterility, as the septum may make cohabitation difficult, or the larger vagina which receives the penis may end in a blunt sac. Incision of the septum is the treatment in either case.

Obesity, a frequent cause of amenorrhea and sterility, is treated by a rigid diet. If the obesity diminishes, the menses increase and the woman frequently conceives. For success the earnest co-operation of the patient is essential.

The presence of the hymen sometimes requires attention, as does also a hyperesthetic condition of the vagina. If the woman is anesthetized, the so-called ethereal connection and sexual intercourse perfected once or twice, there will seldom be much trouble afterwards. Treatment is very difficult; the nervous symptoms of vaginismus are present, especially if they rest on a hysterical basis. Dilatation must be very carefully and gradually effected.

Endometritis must be cured. This is often more easily said than done. The more radical treatment of recent years promises a more favorable prognosis for sterility. It is not unusual to see women who have long been sterile immediately conceive after curetting the uterus for endometritis. In sterility from chronic cervical endometritis, I have had good success from painting the cervical canal with a solution recommended to me by Dr. Clement Godson, of St. Bartholomew's Hospital. This consists of perchloride of iron one part, glycerin three parts. A cure often results and conception is not infrequent. Often dependent on constitutional causes, treatment to this end is effective in these intra-uterine inflammations.

Dilatation of the cervix may be done either slowly or rapidly. Much controversy exists as to which is the better method. If we look over the testimony, we will find that both methods are temporarily successful; that all are followed sooner or later by a return of the stenosis; that the dysmenorrhea has been re-

lieved in a larger or a smaller number, and that a small percentage of cases in both operations are followed by endometritis, pelvic cellulitis, or peritonitis; that dysmenorrhea disappears in many and sterility in a small number of instances.

Outerbridge, last spring, introduced an instrument for the cure of sterility, which consisted of a continuous steel wire, made so as to form an anterior and a posterior blade, with a slight eversion at one end, the other bent at right angles. This instrument is to be inserted into the cervical canal in cases where it is not sufficiently patent. The instrument varies in length from one to three inches, is tempered to give it strength, and is silver or gold plated, assuring safety.

Sterility due to flexions of the uterus must be treated by raising the organ and lessening the amount of constriction. This is best accomplished by re-establishing the normal relative positions of the uterine body and cervix.

Catheterization of the Fallopian tubes, in the hands of an experienced operator, is a feasible and in some instances an effectual method of treating certain cases of dysmenorrhea and sterility otherwise incurable.

Sea-bathing seems to have an inexplicably beneficial effect on many stubborn cases, as also have mineral waters and residence at watering places. Among those highly recommended are Schwalbach, Spa, Franzensbad, Ems, and Marienbad.

The crystalline phosphide of zinc, one-eighth of a grain morning and evening, is highly recommended.

Belladonna has the reputation of promoting conception, but has not been very successful in my hands.

The avoidance of tea-drinking and the ingestion of tannin and sulphur are to be advised.

Cohnstein thinks there is a time with every woman, at more or less greater intervals, which he terms the period of predilection for fecundation. This may be a certain month or season of the year.

A medication which raises the nutrition of the entire organism, improves the blood formation, and favors the resorption of the pathological products in the sexual organs, is the indication needed.

Should the husband endeavor to rouse the sexual passions of the wife before the sexual act is undertaken, the orgasms would occur more nearly together, and conception be more apt to follow.

The outflow of the semen from the vagina is not so frequent a cause of sterility as imagined, though it does act in this way. The woman should have her hips in an elevated position during coition, so that the vault of the vagina is lower than the introitus. The penis should be allowed to remain as long as possible in the vagina, forming an obstacle to the escape of the semen. Crossing the legs and remaining quiet in this position may also help retention. It is also recommended that immediately after intercourse the abdominal wall be elevated, so as to exercise an aspirating force upon the semen. It is well for the woman to take the knee-chest position immediately after the completion of sexual intercourse. Perineorrhaphy is frequently necessary for the prevention of this reflux.

Artificial impregnation should be done as a last resort in otherwise hopeless cases. If properly carried out, it is not dangerous to life and may result successfully. There are no real moral reasons against it, but it is disagreeable for all concerned. Marion Sims, who first used this method on the human being, found it to succeed only once in twenty-seven cases. Most gynecologists have met with no result at all. First, we should have the semen examined microscopically. Absence or paucity of the zoosperms, the presence of many dead or deformed ones, especially the presence of pus cells, contra-indicate operation. The procedure should follow an alkaline vaginal injection—phosphate of soda being recommended—which neutralizes the effect of the vaginal secretions. Sexual intercourse should then take place promptly, as the obnoxious secretions may be reproduced. The syringe should be new and free from infectious matter, and filled with the alkaline solution. It should be brought exactly to the temperature of the body by placing it in water at that temperature, or placed in the vagina for some time previous to use. The semen can be taken up by suction into the syringe, which should be done very slowly. It can be collected by the aid of a speculum, or the semen can be very nicely preserved from the secretions of the vagina by the use of a condom, which also makes it easier to obtain the fluid. The nozzle of the syringe should be passed up to the fundus of the uterus. A few drops are all sufficient, but a larger mass will do no harm. After the injection the woman should lie quiet for a time. The operation should be made during that period when the woman is most easily impregnated, near the

menses. Objections urged on purely ethical grounds may well be left to the parties chiefly concerned, the husband and the wife. If the wife objects to the physician taking part in her impregnation, the husband can be carefully instructed and may be able to carry out the matter himself. The operation is not necessarily condemned by either morality or religion; it is justified by the essentially legitimate and essentially moral desire to beget children.

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AN EPIDEMIC OF PEMPHIGUS NEONATORUM.

BY

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AN account of a recent epidemic of pemphigus neonatorum at the Infirmary for Women and Children may have some interest for the profession, such epidemics being apparently very rare in this country. The infant of the first patient delivered after the house was reopened last autumn developed on the third day an eruption of vesicles on the arms, legs, and abdomen. This was at first considered syphilitic, but the child, though rather delicate, evinced no other symptoms of syphilis, and three weeks later was apparently perfectly healthy. During the following month, eleven children were born, and of these, all but three developed pemphigus. The course of the disease was about the same in all cases, appearing on the third or fourth day after birth, in one case on the second day. The vesicles developed rapidly, were in shape round or oval, from the size of a pin head to that of a dime, and situated on a reddish base. The contents, at first clear, became purulent on the second day. When undisturbed, the fluid was reabsorbed; but oftener the vesicles were opened by friction. The epidermis dried quickly. The fluid was alkaline in reaction, and by the microscope

showed blood cells and pus corpuscles. A careful examination was made for bacilli, but with negative results. Each crop of vesicles lasted from a few hours to two days, and was succeeded by a fresh crop. All parts of the body, with the exception of the soles of the feet and palms of the hand, were affected, but especially the abdomen and inner surface of the thighs. In this particular the disease presented a marked contrast to the ordinary syphilitic pemphigus, in which the hands and feet are first affected.

In two cases there was slight paronychia. The disease ran its course in from one to three weeks. It seemed to be a purely local process; no rise of temperature or loss of weight occurred. The babies were of average or above the average weight, and healthy in every other respect. In only one case, in which the loss of epidermis was very great, was there unusual fretfulness. One infant, isolated on account of a purulent conjunctivitis, escaped. Another, also isolated, escaped with a single bleb. Two who were exposed manifested no trace of the disorder. The epidemic died out gradually, a baby born the 1st of October presenting a single bleb. No further cases were observed until December, when an unusually fine, healthy child developed a single crop of vesicles on the abdomen. Since then there have been no cases.

An outbreak of pemphigus similar to this occurred at the Infirmary two years ago, six children only being affected and to a much less extent. I am unable to find any literature on the subject in American, and very little in English works, though many sporadic cases have been reported, and also cases of syphilitic pemphigus. Very remarkable epidemics have occurred from time to time in the great Maternities on the Continent, the most noteworthy of these being the one in Paris in 1867, reported by Hervieux, in which one hundred and fifty cases were observed (*Union Médicale*, 1868, No. 30); the one in 1869 in Halle, of one hundred cases, reported by Olshausen (*Archiv f. Gynäk.*, 1870, I.); and the one in Dresden in 1878-9, in which one hundred and sixty-six cases were reported by Winckel ("Berichte aus d. k. sächs. Entbindungs-Institut." 1879, III.).

Olshausen, Koch, and Dohrn report epidemics following in the wake of certain midwives, one woman enjoying the experience of twenty-three cases in her practice, while two hun

dred infants delivered by other midwives in the same city escaped. All observers agree that the season of the year, sex and constitution of the child, have no effect either upon the development of the disease or its usual benign course. Regarding the etiology of the disease, the question still hangs in the balance. Henoeh states that he has seen only sporadic cases. Bohn' regards it as only the desquamation which occurs physiologically during the first week, enormously increased by some external irritation, as, for instance, baths of too high a temperature.

Among those who have personally observed the disease in institutions, the weight of opinion is decidedly in favor of its being contagious. Numerous experiments have been tried in inoculating both the lower animals and man, but with unsatisfactory results. In three cases, inoculation produced a single bleb, but no crop of vesicles. In several cases, mothers have developed single blebs on the breasts, and nurses upon the fingers. The bacillus is said to have been discovered by Birch-Hirschfeld, and in 1881 by Gibier.

The outbreak at the Infirmary cannot be attributed to a habit of giving too hot baths, as the temperature of the water is always carefully measured. Great care is also taken regarding cleanliness and the protection of the soft skin from mechanical irritation.

Against the common assumption that pemphigus in the newborn is always syphilitic may be urged that there are no other signs of syphilis and that recovery takes place without medication.

¹ "Handbuch der Kinderkrankheiten," Gerhardt.

A CASE OF EXTRA-UTERINE PREGNANCY; OPERATION; RECOVERY.¹

BY

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My purpose in reporting the following case is to illustrate some essential features in the pathology and symptomatology of extra-uterine pregnancy, and, at the same time, to emphasize the necessity of prompt operative interference. At our meeting in Washington last year, this subject was more carefully considered and more thoroughly elucidated than in any previous discussion of the urgent questions involved. It is at the present time one of the most interesting and important practical subjects to which the attention of the profession can be directed.

Mrs. W. S. E., aged 28 years, gave birth to her first child on the 6th of December, 1888. On the 8th of March, 1889, notwithstanding the fact that she was nursing, the catamenia returned. She also menstruated in April and May, and in June missed her period and exhibited some of the rational signs of pregnancy. On the 26th day of June, she suffered a violent paroxysm of pelvic pain. The pain was very severe, paroxysmal, and long-continued. Very soon after this paroxysm uterine hemorrhage appeared. The flow varied at times as to quantity, and was lighter than the normal menstrual discharge. This discharge, slight at first, increased in quantity on the following day. On the 28th, a second paroxysm of pain occurred, less severe than the preceding one, and the uterine flow increased and continued for a week. Then there was a week free from pain and hemorrhage. The milk returned to the breasts and the patient arose from bed. At the end of a week, she was again seized with a violent paroxysm of pain, and uterine hemorrhage recurred. For a week there was daily paroxysmal pain of diminished severity, when once again a period of apparent relief came. On the 27th of July, she suffered pain of unusual severity, with symptoms of shock and collapse. On the 29th, I was called to see her for the first time, and her husband, a prominent young physician of a Southern city, was summoned by telegraph. Having been at her bedside during the onset, her husband was lulled into an overconfident security by the apparent relief which followed the first

¹ Presented to the American Association of Obstetricians and Gynecologists, September 17th to 19th, 1889.

paroxysm, and had returned to his home and duties. From him I obtained the very accurate history of the case detailed above.

I found the patient pale and feeble from loss of blood, with pinched features, rapid pulse, and serous vomiting. The abdomen was distended and tender, and the lower limbs drawn upward. The pelvis was filled with blood, and peritonitis had supervened. The uterus was pushed to the left side and the bloody flow was continuous. I proposed immediate operation, which was performed on the morning of July 30th, after consultation with Drs. William Huffman and Bush, of Lancaster, Ky., who were in attendance and gave me every possible aid in the operation and care of the patient afterward. Dr. J. B. Kinnaird, of Lancaster, was also present at the operation and rendered valuable assistance. On opening the abdomen, large blood clots presented; the pelvis was filled with clot. This was quickly turned out, and I sought the fundus uteri with my fingers. The fetal ball was found on the right side, with ruptured tube. All was securely tied away and removed, the abdomen cleansed with hot water, drainage tube inserted, and abdomen closed. Length of incision, three inches; patient on the table thirty-four minutes. Nausea and vomiting, which had been such conspicuous and distressing symptoms for two days preceding the operation, persisted for twenty-four hours, but subsided and disappeared after the bowels were thoroughly moved by several small doses of calomel.

The progress of the case was uninterrupted. The drainage tube was removed on the fourth day, and convalescence was prompt. This lady is now quite restored to good health.

Recalling the history of the case as I have narrated it, you will see that the first attack of pain was from rupture of the Fallopian tube. Then there was a respite from pain and apparent relief for a time, when the fetal sac broke, allowing the fetus to escape into the abdomen and filling the abdomen with blood.

The great practical lesson conveyed by this case is that the medical attendant should urge prompt interference by abdominal section in cases presenting these symptoms. An entire month elapsed between the time this lady was first attacked with violent paroxysms of sickening pelvic pain and the operation for her relief. The operation was then performed upon an exsanguinated patient with peritonitis established. When the diagnosis is questionable, the trivial risk of an exploratory incision is not to be compared to the immense peril of delay.

A London weekly of recent date announced that three operations for extra-uterine pregnancy had been performed during

the week in one district of the metropolis. A distinguished Fellow of this Association within three years past has operated in sixteen cases. Formad, of Philadelphia, states that within a brief period of his service as coroner's physician he found, post-mortem, eighteen deaths from ruptured tubal pregnancy. From these facts it is apparent how frequently this condition obtains. In this great country of ours, with its teeming millions scattered over the vast area of the States, who can approximate the number of women dying annually of ruptured tubal pregnancy diagnosed and treated as "idiopathic peritonitis," "accidental hemorrhage," etc.? In these cases, everything as to results depends upon prompt surgical interference; realizing which, let us appeal to the great body of the profession to recognize this important advance in pelvic surgery, and rescue the patient by abdominal section, instead of consigning her to the so-called conservative fate of opium euthanasia, toying with electricity, or applying expectant methods.

CORRESPONDENCE.

THE FLAP-SPLITTING OPERATION FOR LACERATED PERINEUM.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

DR. PAUL F. MUNDÉ:

SIR:—I have much pleasure in acknowledging the complete account of my operation for lacerated perineum which you have been kind enough to publish in the July number of your JOURNAL, and I have only to make one slight correction upon a matter which really is of very little importance. It never serves any very good purpose to make claims for precedence, and I waive all such discussions; but as you unwittingly make me do myself an injustice, you will perhaps condone my proceedings in this instance. You say that I attribute the operation to a countryman of my own, Colles; that is not so. I attribute another operation to Colles, in which the principle of flap-splitting is more evident than in the perineum operation. I was under the impression that I was

original in performing the operation for vesico-vaginal fistula by the principle of flap-splitting, but I found that it had been completely described by a very old and dear friend of mine, the late Dr. Maurice Colles, of Dublin. His paper in the *Dublin Medical Journal* for 1861 puts all question of precedence on this point aside forever; but no suggestion occurs in Colles' paper about applying the principle to the perineum, and the curious point is that I developed my proceedings from the perineum first and then applied them to the operation for vesico-vaginal fistula, quite independently of Dr. Colles' paper, which I confess to my fault I had never seen. But that does not in the least degree affect the priority of the principle in the perineum operation, where the details of its application are essentially different.

I am, etc.,

LAWSON TAIT.

BIRMINGHAM, August 6th, 1889.

DR. MILLER'S LAPARATOMY RECORD.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

SIR :—Your July number contains "A Year's Record of Seventy-five Cases of Abdominal Section," by B. Curtis Miller, M.D., of Charleston, West Va.

My first impression, after reading said "record," was that it was designed as a travesty on the frequency and recklessness with which the operations detailed in the report have been performed during the past five years, but, on a more close examination, I am convinced the author intended it to be accepted as a correct report of what he actually did, and that it would be considered by the profession generally as a very brilliant feat of gynecological surgery.

Assuming such to be the case, I am reluctantly constrained to say the report, as a whole and in detail, is simply astounding and to me incomprehensible. Forty-two women spayed, unsexed, mutilated in one year, in a small, out-of-the-way town in West Virginia!

If such an experience had been detailed by a noted gynecologist in any one of the great commercial centres of the country, it

would have provoked a good deal of astonishment; but to be informed that within the period of one year, in a small town of a few thousand inhabitants, forty-two women had been subjected to operations detailed in Dr. Miller's report, simply overwhelms me with astonishment.

What is the explanation? Are the cases he details of such extraordinary frequency in the neighborhood of Charleston? Do they occur epidemically? Has Dr. Miller acquired such a reputation as to induce patients of that class to seek his aid from all parts of this country? Is it possible that the State of West Virginia can furnish forty-two women annually who are so unfortunate as to require such mutilations? God forbid!

When we come to analyze the clinical data (?) in the several cases in which the uterine appendages were removed, our amazement increases in degree.

I venture to say as a clinical record it has no parallel in clinical medicine, and for audacious and reckless surgical procedure is almost beyond belief.

Dr. Miller is to be congratulated upon his not losing a single case. All recovered immediately. Even the fat woman, whose general health was good prior to the operation and who weighed two hundred and fifty pounds, recovered *rapidly* after losing her ovaries. The twenty-seven who lost either their "tubes" or ovaries, or both, went forth well, happy, and free, rejoicing in the consciousness that they had no naughty "tubes" or ovaries to make their lives miserable in the future.

The surprise and incredulity manifested in this communication at Dr. Miller's record or report will be more fully understood and appreciated by giving a brief statement of my own clinical experience in contrast with that of Dr. Miller.

I have been practising medicine and surgery almost continuously for forty years. During the last fifteen years of that time, my practice has been largely gynecological. I have examined and treated a great many women for various diseases peculiar to their sex. Among the cases which came under observation were now and then a case of ovaritis, some cases of salpingitis, a few cases of hydro-salpinx, and a very few cases of pyo-salpingitis. I can call to mind one or two cases of hydro-salpinx in which the diagnosis could not have been wrong, for the reason that the water was discharged periodically through the uterus. I can recall two or three cases of pyo-salpingitis in which the diagnosis was made in the same way and was equally unequivocal. All these cases are living to-day, enjoying good health. I recall one

case in particular in which pyo-salpingitis developed twenty years ago, and the subject of it is enjoying good health to-day, over seventy years of age.

None of the cases of ovaritis or of disease of the tubes have been operated upon by me or anybody else. In short, of the hundreds of cases that have come under my observation, not a single one of them has required laparotomy for the relief of chronic or suppurative inflammation of the tubes or ovaries. I of course do not include cases of ovariectomy.

I do not wish to be understood as claiming that removal of the uterine appendages is not a legitimate operation, but do claim it has proper limitations; and that, under the modern craze for operating, it has been carried beyond those limitations to a criminal extent.

This, it seems to me, has been very strongly emphasized by the operations reported from the record of Dr. Miller.

I have no personal knowledge of Dr. Miller, would not willingly do him an injury. He writes like a very clever man, and I have no doubt is a good surgeon. But I think he has been putting his surgery to an improper use; has become infatuated with an inordinate desire to operate and become a second Tait.

His report will not add any lustre to American gynecological surgery. It is hoped the doctor, as he grows older, will become wiser and more conservative. C. TRUESDALE, M.D.,

Member Amer. Med. Assoc., etc.

ROCK ISLAND, ILL., August 10th, 1889.

GENEVA (Sw.), August 22d, 1889.

DEAR DR. MUNDÉ:—The notes which have been sent to you from the Newport meeting on my instrument mix together *two* instruments, so as to make the article quite unintelligible (see AM. JOUR. OF OBSTET., July, p. 749). The first seven lines concern my *vesical* catheter.

Then before the words "These grooves" (line 8), the writer ought to have said that in the *uterine* catheter the sliding part has been suppressed, and the instrument is made of one sound or rod grooved on two opposite sides.

Line 9, instead of *a sound*, read *the*. I am sure the same incorrectness must be in all the abstracts published in other journals; but you will oblige me if you have this correction made in the AM. JOUR. OF OBSTET.

Yours faithfully,

A. CORDES.

TRANSACTIONS OF THE AMERICAN GYNECOLOGICAL SOCIETY.

(ABSTRACT.)

FOURTEENTH ANNUAL MEETING.

HELD IN BOSTON, SEPTEMBER 17TH, 18TH, AND 19TH, 1889.

First Day—Morning Session.

The Society met in the Hall of the Massachusetts Institute of Technology, and was called to order at 10 o'clock by the President, DR. H. P. C. WILSON, of Baltimore, Md.

THE ADDRESS OF WELCOME

was delivered by DR. J. P. REYNOLDS, of Boston, who, in the name of the city, old and new, welcomed its guests with open arms.

The first paper was read by DR. H. J. GARRIGUES, of New York, and was entitled

THE USE AND ABUSE OF ANTISEPTIC INJECTIONS IN OBSTETRIC PRACTICE.

1. *When to Inject.*—A vaginal injection before delivery, repeated every three hours, removes or kills enough microbes to render the canal aseptic enough for practical purposes. The vulva is disinfected separately by rubbing it with cotton soaked in the antiseptic fluid.

After delivery, the vagina should not be touched in normal cases, but only protected by the application of the antiseptic occlusion dressing.

If it has been necessary during labor to enter the uterus, or, after labor, the vagina, a vaginal or intra-uterine injection ought to be given, according to the depth to which the canal has been entered.

Intra-uterine injection is given when the fetus is macerated.

As a therapeutic measure, vaginal injection is used when the lochia are fetid.

In puerperal diphtheria, vaginal or intra-uterine injections are used before and after cauterization with chloride of zinc, corresponding to the locality affected.

Curetting is preceded by a vaginal and followed by an intra-uterine injection.

Before opening an abscess from the vagina, this organ is syringed and swabbed, and after the incision the cavity is syringed.

In peritonitis, the uterus is once well disinfected, but after that the patient is not disturbed.

In abortions a vaginal injection is given before removal of the ovum, and an intra-uterine after its removal.

2. *What to Inject.*—The author has collected twenty-two cases of death from mercurial poisoning in obstetric practice. If in some the fatal issue was due to faults in the use of the bichloride of mercury, others are above criticism. He thinks, therefore, it should not be used for injections. Of late he has used creolin in a two-per-cent emulsion, and is much pleased with it, except in cases where he wishes to judge of the condition of the interior of the womb by the appearance of the returning fluid.

Bichloride is absolutely contra-indicated in anemia, abortion, kidney disease, and diarrhea.

3. *How to Inject.*—He prefers single-current tubes to double-current tubes. Immediately after delivery, it is better to introduce it without speculum.

Great care should be taken to go in the right direction and to the proper depth, so as to be sure to wash out the cavity of the uterus and not perforate its wall.

As a hemostatic, very hot fluid is needed, otherwise lukewarm is preferable.

For intra-uterine injections, not more than two or three pints should be used.

If the fluid ceases to return from the uterus, the can or bag of the fountain syringe should be brought down below the level of the bed, so as to reverse the current by siphonic action.

The fluid should be removed from the womb by squeezing it, and from the vagina by turning the patient on her side.

The patient ought always to be on her back during an intra-uterine injection.

Fountain syringes are safer than bulb syringes.

They ought not to be suspended more than one or two feet above the uterus.

Properly administered injections are a most valuable prophylactic and curative remedy, and not so difficult to handle but that every intelligent practitioner can use them.

DR. FORDYCE BARKER, of New York, congratulated Dr. Garrigues on the most remarkable results he had achieved at the New York Maternity Hospital.

DR. LUSK, of New York, agreed heartily with the fundamental principles set forth by Garrigues, together with the restrictions mentioned. He desired to call attention to some points regarding which he held very decided opinions.

1st. He believes all cases of puerperal septic fever, where the poison has entered through the vagina, to be due to neglect, on the part of the accoucheur, of ordinary antiseptic precautions.

2d. Cases most successfully treated by the douche are those resulting from putrid infection, from decomposing decidual shreds, blood clots, or placental fragments; these are not true cases of septicemia.

3d. In pure septicemia, that caused by the invasion of the system by round bacteria, the douche could only benefit at first, and could be of no use when the germs had gained access to the general system, the uterine parenchyma, the peritoneal cavity, the lymphatics of the uterus and broad ligament, etc.

When an intra-uterine douche is indicated, use it once thoroughly, then introduce an iodoform pencil, and then let the uterus alone. Do not use the douche every three hours. Do not interfere with the uterus without reason when there is localized exudation, peritonitis, etc. With repeated douching, some little of the injection fluid will remain behind each time, in spite of every care, and may readily cause symptoms of poisoning by the antiseptic used. A slight elevation of temperature, a moderately rapid pulse, are not symptoms calling for repeated douching, which if employed may do grave damage. Fetor is not necessarily an indication for the douche, for it may be, and commonly is, produced by an ordinary catarrhal endometritis. Look the patient over carefully before using the douche, and be governed more by her general condition than by any one symptom.

Do not attend infectious diseases, erysipelas, diphtheria, scarlatina, etc., and care for your confinement cases at the same time, even if you do use antiseptic precautions and vaginal douches q. 3 h., for you surely will have cases of puerperal sepsis.

Be careful in your diagnosis, and remember that other fevers, as typhoid, may very closely resemble true puerperal septicemia.

Dolérís and others have recently claimed that by the use of the curette, followed by the écouvillon (a small fine brush), and then irrigation, and then iodoform, they could get as good results as follow the ordinary washing out.

DR. H. C. COE, of New York, said the determination of the point of the septic infection was often by no means easy. He agreed that the douching should be limited to once or twice in nearly all cases. Creolin was a reliable agent; the main objection was the masking quality of its odor. He considered prophylaxis most important, but did not take quite the extreme stand of Lusk.

DR. WM. M. POLK, of New York, employed a method somewhat different from those of Garrigues and Lusk. He treated the inside of the genital tract much as he would the skin, first cleaning off the mucous surfaces with soap and water, and then employing a 1:5,000 bichloride solution. In puerperal sepsis, he would treat the uterus as he would any other suppurating cavity. The patient being placed on her side, the vagina washed with soap and water, the surface of the uterine cavity is to be thoroughly cleaned with the cotton swab or the curette, then washed with the bichloride solution and dried with cotton. After this, the cavity is to be packed with iodoform or creolin gauze. This is his routine treatment after abortion, and gives him the best results; only very rarely is it necessary to repeat the procedure after forty-eight hours.

DR. MUNDÉ said that one point not sufficiently dwelt upon was the absolute necessity of ascertaining the precise source of infection before proceeding blindly to work. In these cases, one nearly always finds blood clots, placental tissue, decidual shreds, or an inflammatory villous hypertrophy of the placental site, etc. The uterine cavity should be thoroughly cleaned out. He believed in the curette and had long advocated its use. After the curette, use the douche once or twice, then stop. After using the douche, he employed ergot, the cold coil, and the antiseptic pad, and cases that were not too far

gone did well. The worst were those cases of pure septicemia where there was no pain, no cellulitis, no odor. In these, the infection had passed beyond our reach.

Frequently a patient would have a chill with a rise of temperature a half-hour after the use of the douche. This chill need cause no alarm, is traumatic, and convalescence will go on undisturbed.

After normal confinement, the use of the douche is certainly uncalled for. He agrees with Lusk that sepsis usually depends on some fault of the accoucheur.

DR. H. J. BOLDT, of New York, showed an improvement on the Fritsch-Bozeman catheter which rendered it easier to clean.

DR. A. PALMER DUDLEY, of New York, thought a cause of sepsis that was often overlooked was the presence of an unilateral pyosalpinx. This might easily light up inflammation after being subjected to the traumatism of labor. A careful examination of the tubes and ovaries in these cases might reveal the cause of the trouble and show the necessity for even laparotomy.

DR. HOWARD KELLY, of Philadelphia, in certain severe and rapidly fatal cases thought the alternative of laparotomy and removal of the entire uterus might save the patient. It would be no more severe than the Porro operation. The use of his obstetric cushion, similar to that used for laparotomy, was of the greatest value where the surroundings were dirty and poor. It kept both the patient and the bed clean and dry.

DR. E. C. GEHRUNG, of St. Louis, thought it better to use an aspirating rather than an injecting force in employing the double-current catheter, and so avoid the danger of injecting the tubes (see *AM. JOUR. OF OBSTET.*, vol. xix., page 698).

DR. W. GILL WYLIE, of New York, believed in frequent washing-out of the uterus, even every hour in some cases. When the trouble does not yield to washing, he often finds by careful examination that the focus of infection is in the pelvic tissues. In these cases it may be necessary to use the knife or aspirator, and evacuate the broad ligament through the vagina. In certain cases, the poison is localized in the tubes or in the peritoneal cavity, and laparotomy with washing-out of the peritoneal cavity becomes necessary, other means having failed. Sepsis is a much more frequent cause of salpingitis than gonorrhea.

DR. GARRIGUES, in closing the discussion, said: When there is fever, search over the whole body carefully, and find the cause; if about the womb, then give the injection. The distinction between the various forms of septic infection is not practical at the bedside. The use of soap and water involves exposure to the surrounding air, and the possibility of infection through it which G. thinks may occur. This risk may be removed by the subsequent douche that Polk employs. He would consider it hardly necessary to leave the gauze in the uterus after the disinfection. Chills are not common when hot water is used, but when they do occur discontinue the douche. Laparotomy after confinement must have a very limited application, both on account of objection on the part of the friends and doubt in the exact diagnosis, so that it must always be merely exploratory.

He would prefer the intra-uterine suppository to the frequent douche advocated by Wylie.

DR. JOHN BYRNÉ, of Brooklyn, read a paper entitled

A DIGEST OF TWENTY YEARS' EXPERIENCE IN THE TREATMENT OF
CANCER OF THE UTERUS BY GALVANO-CAUTERY.

The facts and suggestions offered are based solely on personal experience, and have not been published sooner because their author wished to wait for a ripe opinion.

The pioneers in this line of treatment had many difficulties to contend with in the shape of bulky, imperfect, and expensive instruments, but batteries and instruments are now greatly improved. While a practical storage battery is to be desired, he did not think it would ever be produced. The Paquelin cautery he considers an ingenious philosophical contrivance, but of little use and dangerous on account of the radiated heat.

He has operated on 367 cases of cancer of the uterus during the last twenty years; of these, 151 were lost to observation before the end of the first year. In 59 cases, the vaginal portion of the cervix alone was involved, the average period of exemption in 36 of these cases which were kept under observation being eight years and seven months, 30 remaining well for more than five years. Of 81 where the entire cervix was affected, 35 averaged five and a half years of exemption, 18 remaining well over five years. Of 8 where the disease was confined to the corpus uteri, the average period of relief was two years. Of 219 where both cervix and body were affected, 111 were lost sight of, 26 recurred within one year, and in 78 the average period of respite was three years.

In all cases of malignant nature we must include *all* of the vaginal cervix, or even more, no matter how small the growth. *Cauterization must be thorough*, no matter by what means the growth may have been removed. It is very important to impress the patient with a sense of the vital necessity of frequent examination after any operation.

The usual mode of procedure is to remove the cervix as high up as possible by the galvano-cautery loop, then to pass an instrument into the uterine cavity and thoroughly cauterize the mucous membrane, then to recauterize the cervical stump. Examine every month for a year, then less frequently. For grave cases relief is all that can be hoped for, but this is great and should be given. It is a violation of the principles of humanity to withhold from these sufferers any means which will even in part relieve them. After the operation, cachexia and anemia often temporarily disappear, and despair gives place to buoyant hope. Recurrence is less severe, in that hemorrhage, pain, and odor are all less marked, and the growth is apt to involve the ovary or lymphatics of the broad ligament.

If scissors are first used, the results do not seem to be so good. The parts must be quite dry before the cautery is used. All moisture must be wiped away and the cautery repeatedly applied until all tissue within reach is thoroughly seared. As a rule, no medication

is needed after the operation, though occasionally an opium suppository is useful, and, after a few days, cleansing douches. The deeper lying cancer cells are destroyed by less heat than will destroy normal tissue. The cautery handle should be wrapped with flannel to protect the vagina from heat, and the cautery always introduced cold and the current not turned on until it is in contact with the diseased part. Slight external burns will cause more pain than all the rest of the operation. He deprecates reckless surgery when this method gives so much better and safer results.

DR. REEVES JACKSON, of Chicago, thought the Society fortunate in having this important subject presented by one so competent. The careful records of twenty years lead to conclusions that cannot have been hastily or superficially drawn.

In the treatment of cancer we have three competing methods: amputation, cautery, and hysterectomy. We must judge these by their results, and adopt that which is best and least dangerous in any particular case. The successful removal of a cancerous uterus is very different from the successful removal of uterine cancer. Thinks after hearing Dr. B.'s paper that he shall return to the galvano-cautery. He had given up its use, because at a critical period "his fire would go out."

DR. THADDEUS A. REAMY, of Cincinnati, dissented from some of the statements made by Dr. Byrne. The galvano-cautery is subject to the same disadvantages as other means; when the disease is beyond the os internum, then, even without any other symptom or cachexia, the galvano-cautery will not save the patient.

It is the extent to which the disease has gone that marks the limit of successful treatment, and not the particular method used. The choice of method should be conservative rather than radical. Vaginal hysterectomy he believed had a narrow but well-defined limit, and would undoubtedly save a few who could not be reached otherwise; these were cases where the fundal endometrium was involved.

While he had profound respect for the paper and its author, and believed that cancer was primarily local, he thought that the limits both of the disease and treatment were not clearly enough stated.

DR. BYRNE, in closing the discussion, said Dr. Reamy had somewhat misunderstood his views. It was impossible to assert in any given case the limits of the disease. No matter what operative means had been employed, he would use the cautery thoroughly after all the tissue that could be was removed. The influence of the cautery extended far below the surface, and it would destroy diseased tissue that could not be reached by other means. He does not claim absolute cure, but long-continued relief from all symptoms. He does not believe that we hear the true results of hysterectomy, for very many fatal cases are never recorded.

DR. H. C. COE, of New York, read in memoriam an eloquent tribute to the life and work of the late DR. JAMES B. HUNTER.

First Day—Afternoon Session.

DR. PAUL F. MUNDÉ, of New York, read a paper entitled

THE NATURE AND LIMITATION OF OPERATIVE TREATMENT FOR UTERINE FIBROIDS.

He questioned whether the pathological importance and pernicious influence of these tumors really warranted the extravagant enthusi-

asm accorded to their conservative treatment by galvanism. He did not wish to detract from the method or from the credit due its originator, but thought the relative value of the treatment exaggerated and its indications extended beyond absolute necessity. He cited cases also where severe or fatal operations had been done for innocuous fibroids. He believed that there was a tendency among the profession at large to look upon all cases of uterine fibroids as requiring treatment of some kind, and the laity were inclined to believe that any tumor was likely to kill, so that he often had difficulty in convincing a patient that her tumor, a fibroid, was comparatively harmless.

Statistics differed widely as to their frequency. His own observations during the last three years covered 2,974 cases of pelvic disease, including 123 instances of uterine fibroid, or 4.14 per cent. Of these but 62 required treatment of any kind, the remaining 61 giving so little trouble that not even medical treatment was thought necessary. The necessity for treatment depends upon the location of the tumor and the symptoms produced. Thus subperitoneal tumors seldom call for treatment except for pressure symptoms; interstitial or submucous for pressure or menorrhagia; cervical for interference with coition, micturition, defecation, or parturition, or the bloody discharge to which they may give rise. The author then reviews the treatment adopted in the 62 cases mentioned, warns against the premature operative removal of sessile fibroids per vaginam, when a few months' oxytocic treatment will often render them easily accessible through the dilated cervix, and reaches the following conclusions:

1. On general principles the rule may be laid down that fibroid growths of the uterus, situated near the fundus uteri and showing no tendency to downward development, if requiring active treatment, are best reached from the abdominal cavity.
2. Tumors, on the other hand, situated near the internal os, and either of their own accord or under the influence of oxytocic measures showing an inclination to dilate that orifice and incroach upon the cervical canal, can almost always, after due preparation, be removed safely through the vagina.
3. About one-half of all fibroid tumors which attract the attention of their possessors, and come under the observation of the physician, require no active treatment of any kind.
4. Only interstitial and rapidly growing subperitoneal tumors call for or are benefited by galvanic treatment.
5. The removal of the hypertrophied mucous membrane of the uterine cavity by the sharp curette will often relieve, at least temporarily, the menorrhagia which is the chief symptom present in the interstitial variety.
6. Enucleation after splitting the capsule, by means of traction by the finger and some blunt instrument, usually offers a safe means of cure in cases of submucous corporeal and interstitial cervical tumors.

7. In certain cases of interstitial tumors which are so situated as not to be amenable to the pressing influence of ergot, and still affecting the general health by profuse uncontrollable hemorrhages, and again in certain cases of rapidly growing subperitoneal tumors in which a thin pedicle cannot readily be formed, the removal of the ovaries may be confidently expected to check the hemorrhage and the growth of the tumor respectively.

8. Laparo-hysterectomy should not be lightly undertaken, and should certainly never be performed merely to relieve the patient of a fibroid tumor, which does not affect her general health, and is merely inconvenient or unsightly.

9. The nearer the prospective menopause the less likely is the fibroid to grow or cause trouble, and therefore, *ceteris paribus*, the less are active or operative measures called for.

DR. W. GILL WYLIE, of New York, read an essay entitled

OBSERVATIONS ON THE NATURE AND TREATMENT OF FIBROID
TUMORS.

Slow-growing tumors produce little discomfort, unless the endometrium or appendages are also involved in a morbid process. After forty years of age, small tumors of the uterus are not usually important, though they may delay the menopause. If there are failing health and pain at about the time of the menopause, it is usually an indication that degeneration has begun, and the removal of the uterus may be indicated.

Fibroid tumors, like all organic structures, have their periods of growth, maturity, and decay. He could not state accurately, but believed that the life of a fibroid was usually from two to eight years. A tumor might be quite large and give rise to no symptoms, but should it, after a period of quietude, begin to grow again, it might require removal. Severe pressure symptoms, degeneration, or supuration were indications for removal. Where hemorrhage from a diseased endometrium could not be controlled by the curette, the appendages should be thoroughly removed, when all bleeding will probably cease. Hysterectomy could now be done with comparative safety; his own mortality was now ten per cent, and he thought it could be lowered. He believed that the value of Apostoli's method had been overestimated. If it did no harm, it at least caused delay, and so might lessen a patient's chances of relief by operation. Electricity was doubtless efficient in stopping hemorrhage from fungous endometritis, but no more efficient or safe than the curette. The use of the latter, in his experience, had been absolutely safe.

As his experience in the use of electricity had not been very large, he might possibly be led to modify his opinion.

DR. REAMY was delighted at the conservatism shown in both papers. There was too much disposition to resort to surgical procedure in almost every case of uterine fibroid. Many small interstitial and subperitoneal tumors never give symptoms, and are only

found post-mortem. Many cases do not need treatment directed toward arrest of growth. We must also recollect the fact that many recover with no treatment at all. Martin found in thirty per cent of his operative cases fatty degeneration, and, as this is the first step in the process of absorption, the inference is that these cases would have gone on to self-cure.

The presence of pus in the circumuterine tissue is not necessarily a fatal contra-indication to operative interference.

These tumors have a very feeble vascular and nerve supply, and very little will often suffice to interfere with their nutrition. Many may be relieved or cured by the persistent use of ergot, and do not need to be sent to a gynecologist. Besides interfering with the nutrition of the tumor by contracting the uterus, ergot acts in these cases as a systemic tonic, the general nutrition is greatly improved, hemorrhage is lessened, the digestion becomes stronger and constipation less troublesome.

While he had the greatest admiration for Apostoli and his method, he believed he claimed too much. In menorrhagia, the use of the sharp curette was not absolutely safe; septic symptoms sometimes followed it. He considered gentle positive galvano-cauterization equally efficient and perfectly safe. The moderate stenosis which follows is not necessarily bad, and may even be beneficial. The mild cauterization is not more damaging than the curette and not half so dangerous. Electro-puncture was far more dangerous than the use of the pole in the uterus, and should but rarely be employed.

In cases where he had removed the tubes, he had not always succeeded in arresting the growth or hemorrhage, particularly in rapidly growing fibro-cysts, which he now thought always required radical removal.

DR. GEO. ENGELMANN, of St. Louis, had never recorded his results, because they did not come up to his expectations, though in many cases they were very satisfactory. He had seen several old inflammatory masses mistaken for fibroids and treated by electricity with the greatest benefit. He has treated similar conditions with good results. Has had favorable results in hemorrhagic cases. As a rule, the patient is rendered comfortable and able to attend to her duties. We should be satisfied with these results with so very safe a method. As in other things, we go through fashions in the treatment of fibroids. There is no one method. The treatment should be adapted with reference to the individual case and circumstances. Treatment by the negative pole in the uterine cavity is far preferable to puncture, which, in his experience, is apt to produce cystic growth and rapid development. Ergot is more slow and less certain than electricity in removing annoying symptoms.

DR. JAMES R. CHADWICK, of Boston, does not think electricity so perfectly safe; has had fatal results in spite of close following of Apostoli's rules and without puncture. He has found difficulty in persuading patients to continue the treatment, and has never seen any marked diminution in the size of the tumor. His experience is not favorable, and he has given the method up. He does not agree with Dr. Reamy, and thinks any one with a panacea should be severely criticised.

DR. VAN DE WARKER, of Syracuse, while not accepting everything claimed for Apostoli's method, believes it to have a positive scientific value in the treatment of fibroids. He believes that electricity can promote or even initiate cystic degeneration, and has records of

several instances in which rapid cystic degeneration followed its employment, even when puncture was not used. A high temperature may follow and persist for months; believes this may be caused by a ptomaine developed by the electricity. He never employs a current strength of over two hundred milliampères. He favors electricity, which greatly benefits, though it does not cure.

DR. M. D. MANN, of Buffalo, regards the subject as still sub judice. He has used the method for two years, and since that time has only operated twice. He usually employs the intra-uterine sound, and sees very marked improvement in the way of diminution in size and lessened hemorrhage. Has seen bad symptoms from puncture, and only uses it exceptionally and carefully.

DR. MUNDE has had favorable results from several cases of electro-puncture where the tumor has disappeared, but twice the patients were rather seriously ill after it. Has seen peritonitis develop once after puncture; nevertheless, he believes in it, used with antiseptic precautions and under certain circumstances. He believes in Apostoli's method to a certain degree.

DR. WYLIE believes in a good steel curette.

Second Day—Morning Session.

DR. REEVES JACKSON, of Chicago, reported

A CASE OF ABDOMINAL LIPOMA SIMULATING OVARIAN TUMOR.

The patient was a multipara, previously in good health, all the functions normal, who for two years had complained of pelvic pain, abdominal enlargement, and of increasing cachexia. An elastic, semi-fluctuant tumor was found, extending from the pelvis to three inches above the umbilicus, which was considered to be ovarian. Laparotomy was done, and showed the tumor to be a lobulated lipoma springing from between the peritoneal folds of the mesentery and the retro-peritoneal space. It was not removed. The wound was closed, and the patient recovered.

These tumors are excessively rare. Péan has reported two cases: one, diagnosed as ovarian cyst, removed, weight 27 pounds; the second, diagnosed as fibro-cyst of uterus, removed, showed spots of calcareous degeneration; patients both died. Cases are also recorded by Spencer Wells: one, weight 30 pounds, laparotomy, death; Barbour, one, 20 pounds, laparotomy, recovered; Holmes, two, laparotomy, both died.

In all of these cases the tumors were retro-peritoneal, were not diagnosed before operation, and operation was followed by excessive mortality. In view of this latter fact, he was very glad that he had not attempted to remove the tumor in his case.

DRS. S. C. GORDON, C. C. LEE, and FORDYCE BARKER had seen similar cases, in all of which operation had been followed by death. It seemed strange that the removal of a simple lipomatous mass should prove so extremely fatal.

DR. H. C. COE questioned if there was not an element of malignancy in these cases. He had seen two where the gross appearances were like lipoma, but where a microscopical examination showed undoubted malignancy.

DR. ENGELMANN asked were not some of the cases fatty degeneration of the omentum. If so, he could understand the great mortality following their removal.

DR. JACKSON answered that all the cases were distinct subperitoneal fatty tumors.

The President, DR. H. P. C. WILSON, of Baltimore, then delivered the

ANNUAL ADDRESS.

After reviewing the history of the Society, telling of its achievements in the past and of its promises for the future, he asked: Shall we do laparotomy immediately before or during menstruation? His second case of laparotomy, eighteen years ago, was done during menstruation; recovery was particularly rapid. Soon after he had done oöphorectomy under the same conditions with equally good result, and since had operated many times at this period and had never lost one; so that his experience led him to choose the menstrual time for laparotomy. The pelvic circulation was then active, and the derivative effect of the local bleeding seemed to lessen the chances of inflammatory trouble.

DR. GOODELL had removed ovarian tumors six times during menstruation, and the ovaries in a case of fibroma once, without ill results. He would not select that period, but would do laparotomy then if necessary. He would not like to do hysterectomy at that time, on account of the danger of hemorrhage.

DR. DUDLEY thinks that in most cases there is a bloody vaginal flow after removal of the tubes or ovaries. He would be willing to operate during menstruation, but would then employ a vaginal douche to keep the vagina and external parts clean and aseptic. Had done hysterectomy at that time with good results.

DR. BATTEY said there was a constant metrostaxis on the second or third day after operations upon the appendages. He had not operated on Friday or during menstruation, for the same reason—popular prejudice.

DR. KOLLOCK, of Cheraw, S. C., thinks menstruation acts like a drainage tube. He has long held the views expressed, but has been afraid to advocate them.

DR. COE and DR. REEVES thought it important to differentiate the various operations in discussing the question.

DR. MUNDE would add his testimony to those who had preceded him. He finds no difficulty from hemorrhage during operation, and no increase in the flow following it. He would not choose the menstrual period, but would not postpone operation on account of it. He would cover the vulva with the aseptic pad of Garrigues. He thinks, with Goodell, that it would be risky to remove a myomatous uterus during menstruation.

DR. SKENE said the fact that operations have been safely done during menstruation does not prove anything. Metrostaxis after laparotomy is different from menstruation. He would not think it wisdom to do laparotomy during menstruation or during the active performance of any other vital function, as digestion. The middle period was the best. Some menorrhagic cases were stronger just before menstruation, and in these there might be some advantage in operating at this time.

DR. WILSON closed the discussion.

DR. ELI VAN DE WARKER, of Syracuse, read a paper entitled

AN EXPERIENCE WITH SLOUGHING INTRA-UTERINE FIBROIDS.

The following summary is based upon the facts connected with the group of five cases reported.

First. That the use of the curette to remove the sloughing periphery of an intra-uterine fibroid is proper when any complication, as excessive obesity or extreme exhaustion, renders extirpation extra-hazardous.

Second. That the process of sloughing begins at the outer layers of the mass, and extends layer by layer into its deeper structure.

Third. That rapid dilatation of the cervical canal affords ample space for the manipulations of removal; and that sponge tents and other slow methods of dilatation are unnecessary.

Fourth. That fibroids formerly intra-uterine, when extruded from the uterus and pendulous in the cavity of the cervix, with pedicle therein attached, are rarely found in a sloughing condition.

Fifth. That a form of hystero-tetanus, without trismus, may follow either certain forms of blood-poisoning or uterine lesions. Within the experience of the author, this condition, only met with in the puerperal state, was attended with septicemia.

Sixth. That blanched mucous membranes in excessive and long-continued blood loss, due to intra-uterine fibroids, afford a certain indication that the limits of safety have been reached in operative treatment of sloughing fibroids, and that a doubtful prognosis must be given.

Seventh. That septicemia, with long-continued pyrexia, is necessarily a fatal condition when due to a sloughing fibroid, unless relieved by the removal of the offending mass; that removal, wholly or in part, is a life-saving operation and is imperative; that the operation is comparatively easy and attended with but little danger, except in cases of blanched mucous membranes.

DR. GORDON spoke of a case, aged 50, where there had been a flow for two years, with increasing cachexia, simulating malignant disease. Examination, however, disclosed a sloughing submucous fibroid, which was successfully removed by the curette. A peculiarity of the case was that there was no odor to the sloughing mass.

DR. MANN spoke of a case of recurrent fibroid where, at the first examination, he felt a mass like a bunch of worms protruding from the cervix. A large amount of sloughing tissue was removed with forceps, and the uterus washed out every two hours; patient made a good recovery. In two months the symptoms recurred, and the operation was repeated with the same result. This was done six times. After a seventh operation by another practitioner, the patient died of sepsis. In a case, in a young girl, of an enormous submucous fibroid, with severe metrorrhagia, the ovaries and tubes were removed, with no improvement. Then galvano-puncture with two hundred milliamperes was tried. This started regular labor pains, which came on every day for about two hours. The tumor began to slough, and the os uteri became completely dilated, but the mass

was too large to be forced down. He removed by the spoon saw and morcellment the sloughing tissue as high up as the pelvic brim, and then introduced the hand and arm into the uterus and enucleated the tumor. He then tried to deliver it with the obstetric forceps, but failed. He then did laparotomy, finding the uterus entirely adherent to the anterior abdominal wall, so that the peritoneal cavity was not opened, and with difficulty delivered a fibroid larger than an adult head. The patient made a good recovery, and, strange to say, still menstruates.

A sloughing fibroid is a most serious element of danger, and any method of treatment which aims at inducing sloughing is too risky to be employed.

DR. BATTEY said that as sloughing fibroids were usually found at the period of life when cancer is prevalent, they might be mistaken for malignant growths, as in cases he had seen.

DR. KOLLOCK cited a case where a twelve-pound sloughing fibroid was removed per vaginam. Some time after, laparotomy became necessary, and the uterus, a three-months' fetus, and fifteen fibroids were removed. Patient did well for a time, and then died from sudden heart failure.

DR. WYLIE said there might be considerable change in a fibroid without odor. The first thing to do is to render the sloughing mass aseptic. Use no tampon. Many fibroids produce marked nervous symptoms even after the menopause.

DR. GOODELL said the operative removal of large tumors could not usually be accomplished at one sitting, and might require three or four. The guarded crotchet is a much better instrument than the obstetric forceps with which to remove the tumors.

DR. VAN DE WARKER considers the natural history of these tumors to be this: First, intra-mural, then becoming submucous, then pediculated, then strangulated, the blood supply being cut off by uterine pressure and the displacement of the tumor. He believes in the curette, but does not think disinfection of the mass practicable.

DR. MANN thinks he might be criticised, not for completing the operation, but for proceeding so far at first that it would have been dangerous to allow the mass to remain. His hand, in enucleating the sloughing tumor, had carried infection over the whole surface of the uterine cavity, and infection must have resulted at once if it were not removed. Therefore he did the laparotomy.

DR. H. C. COE read a paper on

DEATH FROM VISCERAL AFFECTIONS AFTER OVARIOTOMY.

The remarkable improvement in the statistics of laparotomy during the past few years proves how much the mortality can be controlled by the surgeon. Still there would always be a certain number of bad cases which would affect the statistics. Many deaths after ovariectomy seemed to be inexplicable. It was the writer's intention to examine such cases by the light of anatomical evidence, to see if it was not sometimes possible to prevent the fatal result. To this end he had reviewed the pathological records of the Woman's Hospital since its beginning, and had tabulated eighty-five cases in which the autopsy on fatal cases of ovariectomy had revealed serious visceral lesions which were either the direct or the indirect cause of death. Formerly deaths after ovariectomy were ascribed to either

shock, peritonitis, or septicemia. Only surgeons of wide experience, like Sir Spencer Wells, reported occasional deaths from visceral complications. These were more frequent than was generally supposed. They might be divided into cardiac, pulmonary, renal, and gastro-intestinal lesions. They might exist before operation or might develop subsequently. Pre-existing cardiac lesions were not uncommon. Valvular lesions, with compensatory hypertrophy, were less dangerous complications than fatty degeneration and dilatation. Patients with fatty degeneration might pass through the operation safely, but might die suddenly soon after, death being erroneously ascribed to shock or loss of blood. A heart apparently healthy before operation might undergo changes subsequently. Gusserow had ascribed several of his fatal cases of laparotomy to "brown atrophy," a condition which was frequently found in patients who had had continuous high temperature before death. Cardiac paralysis might occur from the sudden withdrawal of a large amount of blood from the circulation on removal of the tumor. Doubtless irritation of the abdominal sympathetic plexuses was a potent though obscure cause of heart failure after laparotomy. Extensive pulmonary lesions in patients with pelvic disease requiring laparotomy were often overlooked, being only noted at the autopsy. The writer had observed several cases of chronic pleurisy, phthisis, atelectasis, and emphysema in patients dying after laparotomy; in one instance, death occurred under ether from this cause. Pleurisy was a common complication. Among the direct causes of death in these cases he had noted gangrene of the lung and lobar pneumonia, while acute pleurisy was frequently found at the post-mortem table.

Renal complications were of extreme importance and were frequently overlooked by surgeons who did not make repeated examinations of the urine. The writer had noted cases of chronic interstitial and diffuse nephritis, pyelitis, pyo- and hydronephrosis, the latter following obstruction of the ureter. Some patients undoubtedly died of uremia due to chronic renal disease, with an acute exacerbation after operation. Passive congestion of the kidneys, as found after death, was of no special significance, though intense active hyperemia was of importance, especially if it occurred in organs which were previously crippled. Acute pyelitis and interstitial nephritis were serious and even fatal complications. The writer had noted one fatal case. The gastro-intestinal tract might be the seat of acute inflammation after ovariectomy, or might be affected by adhesions, the result of former peritonitis. Chronic gastric catarrh was quite common in patients with abdominal tumors. The writer had noted moderate dilatation of the stomach in several cases, and, in one, extreme dilatation resulting fatally the fifth day after operation. Intestinal obstruction from old or recent adhesions had resulted fatally in several instances. Death in one case was due to perforation of the intestine from acute ulceration. The writer summarized as follows:

A considerable number of deaths after laparotomy, ascribed to sepsis or peritonitis, are directly due to visceral affections which may have been of long standing. Such complications should always be taken into consideration both before and after the operation, and should be promptly treated. The systematic adoption of proper precautions would sensibly diminish the death rate of abdominal section.

Second Day—Afternoon Session.

DR. GEO. G. ENGELMANN, of St. Louis, presented a paper on
RENAL DISTURBANCES CAUSED BY DISEASE OF THE PELVIC VISCERA.

Ureteritis and nephritis as sequences to pelvic disease are met with, and have been recognized by all observing gynecologists as serious complications, but these conditions have not as yet received that general consideration to which they are entitled. E. desires to call attention to the various forms of nephritis which result from uterine and pelvic disease, considering more especially such cases as follow distortion or compression of the ureters.

Functional derangements and morbid changes in the kidneys may result from

I. The involvement of contiguous structures, the direct spreading of disease to ureters and bladder:

- a, from without, of pelvic inflammation or malignant growths;
- b, from within, by the mucous tract, of septic or gonorrheal inflammation.

II. Pressure from displaced organs, pathological or physiological, by neoplasms or inflammatory products:

- a, on the bladder;
- b, on the ureters.

III. Nerve influence:

- a, reflex irritability or reflex contraction of urethra, bladder, or ureter;
- b, disturbance of innervation, influencing circulation and secretion; perverted nerve action, due to the intimate relations of renal and uterine plexus; the renal anemia of pregnancy, the edema of amenorrhea, etc.

The progress of these cases is usually slow and extremely insidious, and they are overlooked in their earlier stages, because the earlier and less violent symptoms are so blended with the backache, bearing-down and lumbar pains of the pre-existing and more prominent pelvic trouble. Not until the renal disease is assuming serious proportions, in its later stages, is attention called to the complication by vesical and renal tenesmus, by intense renal pains, or the agony of stone or urinary suppression, perhaps the painful distention of a hydronephrosis or an edema, disturbance of vision, headache, and coma; again, we suddenly discover the lesion by an examination of the urine, to which we are led by its extreme variability—sometimes excessively scant and turbid, sometimes free and clear, mostly acid.

sometimes alkaline, and at intervals containing pus, renal cells, and a few granules or hyaline casts.

Relief is then doubtful, unless it be obtained by the removal of an obstructing tumor, and life is endangered either by suppression of urine, uremic intoxication and coma, or by the slow failing from chronic nephritis, with suffering most intense and almost constant.

Carcinoma uteri is probably the most frequent of all pelvic diseases in causing compression of the ureter and the obstructive forms of nephritis, and has been thoroughly studied in this connection, the greatest facility for observation being offered by post-mortem examination; the cases recorded are of nephritis with cystic and fibrous degeneration of the glomeruli and cardiac hypertrophy, or of hydro-nephrosis and contracted kidney, death almost invariably resulting from uremia, unless previously caused by hemorrhage. Fibroid and cystic tumors of uterus or ovaries lead to pyelo-nephritis and hydro-nephrosis more frequently than is generally supposed, and the renal condition should be considered far more than it generally is in determining the indications for operation. Nephritis of obstruction of milder form demands immediate ovariectomy or hysterectomy, but if far advanced contra-indicates surgical interference.

Pressure of the gravid uterus, both in pregnancy and labor, leads to a nephritis, usually of milder form, by pressure on the ureter, or to functional changes by nervous influences.

Descensus uteri, retroflexion, and prolapsus cause pressure upon the ureters near their insertion or upon the trigone itself; they draw the bladder down and expose its tissues and excretory channels to compression against the symphysis, or distort and occlude the ureters.

Inflammation of the pelvic tissues is the most dangerous condition, as it leads to very slowly developing forms of nephritis, and endangers the ureters in a variety of ways not readily diagnosed and often impossible to detect.

The compression from exudates is more evident, either from masses in the vesico-uterine space, upon the trigone and the extremities of the ureters, or extravasations in the broad ligaments, which force the ureters against the brim of the pelvis at the junction of its pelvic and abdominal portion. The ureter is most exposed in its passage through the parametria, when slight indurations or small nodules, as shown by Coe, may affect it, or it is compressed and distorted by cicatrization and contraction of tissue.

The prognosis in all such cases at the present time is serious, as they are not detected until revealed by renal pains, or pus and casts in the urine; and relief cannot readily be obtained unless this should be possible by the removal of a tumor. The result will be materially changed when they are more thoroughly understood, and attention has been more generally directed to these conditions, as they will then be more frequently recognized and detected at a time when they can still be checked.

The point of obstruction is difficult to find. In lean subjects, we may feel the ureter as a thickened cord through the parietes in its abdominal portion, but that part of the pelvic portion which may be palpated, between cervix and bladder, as taught by Snger and Kelly, need show no changes when the obstruction is at the parametria or at the pelvic brim; if changed at all, they are usually attenuated. The urine is very variable by reason of the generally unilateral obstruction, and may be perfectly normal.

The treatment must first be directed to a removal of the cause—hysterectomy, ovariectomy, or absorption of inflammatory masses, as the case may be. Internal remedies afford assistance only when no cause can be detected, or when it cannot be removed. We must open the way for the excretions and afford drainage by dilating the ureter, at least passing the sound to determine the existing conditions; and we may thus remove a plug of mucus, and sometimes afford relief from pain. Should this be impossible or unsuccessful, we may treat the ureter through the bladder, either by way of a dilated urethra or a vesical opening in the trigone. Emmet, then Bozeman, have attained the desired result by stitching the ureter into the vagina and thus rendering it accessible (colpo-uretero-cystotomy). If the kidney cannot be relieved through the natural channel, we must attack it direct, open and drain the pelvis of the kidney, remove concretions, or dilate the ureter from above. Removal of the offending kidney is the last resort, but feasible only if the other is healthy.

The sufferings of a woman afflicted with obstructive nephritis are such, and her fate, if not relieved, so certain and so sad, that we must resort to every means, however severe, to save her.

DR. POLK said the kidney is most apt to cause untoward results after operation. We must never allow operative interference where there is renal insufficiency; not actual renal disease, but insufficient excretory powers. You find this class in the better walks of life in obese women, fond of the pleasures of life, whose urine is not up to the standard. These patients have degenerative changes in the heart and kidney, and any additional strain is dangerous. Prolonged etherization alone is sufficient to damage, and, together with the accompanying shock, is amply sufficient to explain many disastrous results. Chloroform is a better anesthetic for these cases. In the after-management of operative cases, the opium treatment directly conduces to many conditions producing death, by preventing the proper excretion of effete material from the system. Of the laparotomies the statistics of oophorectomy are the best, because these patients, as a rule, have the best excretory organs.

DR. HOWARD KELLY emphasized what Dr. Engelmann had said. He also urged the importance of accurate diagnosis and the value of palpation and catheterization of the ureter, facility in this procedure being readily acquired by a little practice.

DR. B. B. BROWN, of Baltimore, noted several cases where ureteral palpation had been of great value.

DR. H. C. COE was surprised to see how often the ureter could be compressed and pyelo-nephritis be present without symptoms. In

four cases in which he had made a careful autopsy, the kidney had been entirely destroyed, and only a small cicatrix in the broad ligament told the story of ureteral compression.

DR. EMMET said a common cause of trouble after labor was caused by compression of the parts in front of the uterine neck, inducing edema, and so interfering with the passage of urine through the ureters. The condition could easily be detected by bimanual palpation soon after labor. Catheterization of the ureters might help here by overcoming the edema and allowing the passage of the urine into the bladder.

DR. S. C. GORDON, of Portland, Me., presented a paper on

PELVIC CONGESTION VERSUS PELVIC INFLAMMATION.

Of conditions which have given rise to dispute and misunderstanding among surgeons, none is more prominent than pelvic inflammation. The term chronic pelvic inflammation is a misnomer, for while the condition indicated by the term presents some of the phenomena of inflammation, it is not an inflammation in the proper sense of the term. Acute pelvic inflammation may recur an indefinite number of times, the result being resolution, suppuration, or an indurated mass, and it is the latter which is so often termed chronic inflammation. With the induration there is venous congestion. This causes hypernutrition and eventually hyperplasia. The pelvic tissues and organs in general may be involved, and patients so affected seem especially susceptible to renewed attacks of acute inflammation. It appears to him that such a condition existing in cases where operations upon the cervix uteri are required is not benefited by the preparatory treatment advised by Emmet as a preliminary to such operations. It seems more logical to operate upon such patients at once, relieve the passive congestion by free bleeding during the operation, and expect resolution to follow. This plan he had adopted, operations upon the cervix being preceded by thorough curetting of the uterine mucous membrane, and the method had been entirely satisfactory. It is unnecessary to say that such operations should always be performed under anesthesia. Indeed, so fearful is he of exciting pelvic inflammation that he prefers to use an anesthetic if only an intra-uterine application is to be made.

DR. T. A. EMMET does not exactly agree with Dr. Gordon. He does not believe in chronic inflammation. Connective tissue once inflamed is destroyed, and never returns to a normal state. Inflammation beginning in the cellular tissue soon produces changes in the peritoneum overlying it. In old cases you always find the traces of peritoneal inflammation. After the cellular tissue has been inflamed it contracts, just as cicatricial tissue does in any other part of the body. The veins of the part then become straightened and often enormously dilated. This condition he tries to treat by long-continued, steady tampon pressure. There is no use in making intra-uterine applications for the treatment of the endometritis which is often present in these cases. You must relieve the outside condition which produces the uterine congestion. Care in handling any case

with dilated veins is necessary, as inflammation is very readily lighted up.

DR. GORDON wished to call attention to the fact that many of these cases did not need a long course of preparatory treatment before operation.

DR. WM. M. POLK, of New York, presented a paper on

THE SURGICAL TREATMENT OF POSTERIOR DISPLACEMENTS OF THE UTERUS.

The paper considered only those forms of backward displacement which could not be benefited by pessaries. Setting aside the method of Brandt, which he as yet had had very little experience with, operative procedures fell naturally into two general classes: one *indirect*, dealing with the disorder from points without the peritoneal cavity; the other *direct*, dealing directly with it by abdominal section.

The indirect methods are: shortening the round ligaments (Alexander's operation); fixation of uterus in antelexion by suturing its anterior wall through the anterior vaginal wall; fixation of cervix in posterior vaginal fossa.

Of these methods Alexander's is the only one needing consideration, the author's faith in it having been confirmed by fifty-two operations since June, 1883. In 1886 he said: "The operation has a limited but well-defined application; it reaches cases which without it we would abandon or else subject to graver procedures." The indications were "prolapse of the uterus, retroflexion and retroversion of the uterus (where the organ can be replaced but no pessary worn), prolapse of the ovary, the organ not being diseased enough to demand removal." These indications he now modifies somewhat. Thus in extreme cases of retroflexion, with tender and prolapsed ovaries, benefit is usually only temporary. In ovarian prolapse the benefit of the operation is questionable, because the organ is usually diseased, either singly or with an accompanying salpingitis. In retroversion the operation gives the most brilliant results. In prolapsus of any stage, as an adjunct to measures for restoring the pelvic floor, it has a distinct and most useful position, and should always be employed.

Details of operation are not considered, but the author advocates the double incision, one over each external ring.

The direct methods, used when Alexander's is insufficient or contra-indicated, are:

Sewing the fundus uteri to the abdominal wall (Thomas' operation); sewing the cornua to the abdominal wall (Sänger-Kelly operation); reefing the upper portions of the broad ligament, including the round ligament (Tait's operation); reefing the outer border of the broad ligament, excluding the round ligament (Imlach's operation); folding the round ligament (Wylie's operation); uniting the round ligaments in front of the uterus, a plan which the author has devised.

These methods fall into two distinct varieties, one creating new

by the anterior face of the broad ligament—the uterus is thus sometimes feathered backwards, as in Fig. 1.

He has remedied this by reaching over the tops of the tubes and broad ligaments, and catching the *ovarian ligaments* half way between uterus and ovaries, and thus attaching the uterus on either side in a position of marked ante flexion, with a tendency to carry the cervix backwards towards the sacral hollow instead of forwards, as in the earlier operation (Fig. 2).

When the corpus uteri lies back between the utero-sacral ligaments, and can be raised and thrown about in the pelvis like the end of a flail, he has in three cases fastened it up to the abdominal wall without making any incision at all.

After emptying the bladder and cleansing vagina and abdomen, and shaving the pubes, the patient is brought with her buttocks to the edge of a low table, and her legs straddled over the knees of the operator, who is sitting (Fig. 3). The uterus is then brought into ante flexion, and its posterior surface pushed up against the anterior abdominal wall just above the pubes, by means of two fingers in the vagina pressing on the anterior face of the uterus (Fig. 4).

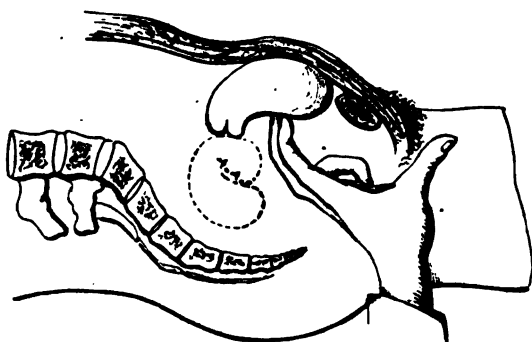


FIG. 4.—Dotted outline shows old vicious position of uterus.

In this way the fingers, acting through the uterus, force the skin and subjacent tissues into a prominent hillock just above the symphysis pubis.

The operator then takes a stout, well-curved needle threaded as a carrier, and, with a turn of the wrist, sweeps the needle through skin, subjacent tissues, and uterine body, and out on the other side (Fig. 5). It should be directed with a view of passing deeply into the body of the uterus. Silk-worm gut or silver wire is then drawn through by the carrier thus introduced, and pulled up taut and shot close to the abdomen. One or two more sutures are passed in the same way above this, and under each of the shot a silver coin with a slit in it is slipped, or such a silver plate as is shown here (Fig. 6), which prevents ulceration of the skin from pressure.

The sutures should be well watched, kept antiseptic, and the patient kept in bed two weeks, when the sutures are cut and pulled out.

DR. T. A. EMMET said that in 1859 Marion Sims had a hollow canula made for carrying a silver wire to be used in stitching the

uterus to the anterior abdominal wall; but, after passing it to the fundus in a case, his courage failed and he did not finish.

In these operations, we must bear in mind that we can lift the uterus too high and so produce the same effect of tension and dilatation of the veins that occurs when the uterus is too low.

DR. POLK might do vaginal hysterectomy for prolapsus in a patient near the menopause, as the operation is now done with so little risk.

A little suppuration of the external wound is not out of place after

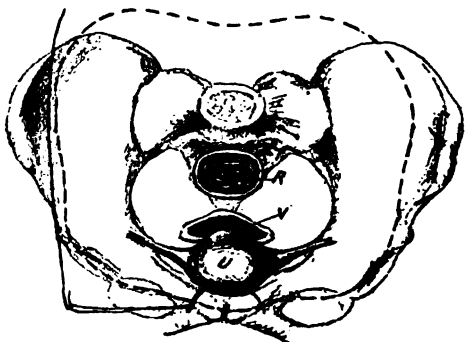


FIG. 5.

Alexander's operation, as it insures a more certain result. Use a drainage tube for twenty-four hours.

Kelly's way is best, but in some cases the tension is too great.

In his own method, the round ligaments are grasped three-fourths of an inch from each uterine corner, brought together in front of the uterus, and tied. If this does not produce enough shortening, a second ligature is thrown around them in front of the first.

DR. BOLDT had done hysterorrhaphy for retroflexion with adhesions eight times, with two failures. After breaking up the adhesions, a suture was passed through the abdominal wall and beneath the serous surface of the fundus uteri, thus suspending it, a pessary

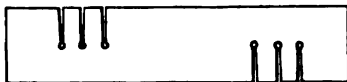


FIG. 6.

being adjusted, which should be left in two months or longer. The suture which has been used, of silk-worm gut or silver, is removed in two weeks. The advantages are that the adhesions to the anterior abdominal wall are not extensive, if any at all take place. The benefit of this is obvious in case of future pregnancy. Since his two failures he had several times practised the method adopted by Leopold. The simple suspension was first done by Boldt in March, 1887, with perfect success in the after-result. The full description of the method is given in the *New York Med. Monats.*, vol. i., No. 4.

Third Day—Morning Session.

DR. A. MARTIN, of Berlin, Germany, sent a paper on

THE RELATION OF UTERINE RETRO-DEVIATION TO PREGNANCY,

which was read by the Secretary.

Is retro-deviation so serious an obstacle to conception as is usually thought, and is gravidity in these cases so dangerous a condition as is generally supposed?

Out of twenty-four thousand gynecological cases, the author has seen one hundred and twenty-one with retroflexion of the gravid uterus. These all complained of the typical symptoms of the condition. Many of the cases applied for treatment at first for uterine catarrh, perimetritis, etc., and after curing these conditions no symptoms were complained of, the patients coming back, after a time, gravid.

In the treatment of these cases, the bladder is first to be emptied, then reposition faithfully tried in the knee-chest or lateral position, and a pessary employed until the uterus would remain above the pelvic brim. Where the displacement persistently recurs, it may be necessary to keep the patient recumbent on the abdomen for a week or more, the uterus being kept replaced.

The following are the conclusions reached:

Retroflexion, congenital or acquired, is not the main obstacle to conception, but the accompanying congestion, endometritis, etc.

The majority of cases of retro-displacement of the gravid uterus remain unobserved and develop normally to term.

Difficulty in passing urine is an important symptom of the condition.

In cases of incarceration, try replacing, and, that failing, consider the induction of abortion or even the extirpation of the uterus.

DR. BACHE EMMET, of New York, did not meet with many cases of retroflexion in which pregnancy was present or possible. He tried to promote pregnancy in these cases, as it was for the best interests of the patient. When gravid, early replacement, either by manual and postural means or by tampons, was most important. Abortion was very apt to occur.

DR. HOWARD KELLY had seen several cases which became pregnant after lifting up the uterus by a pessary. He thinks the tendency is to normal and spontaneous reduction, only a small percentage leading to those terrible cases of incarceration or spontaneous abortion.

DR. T. A. EMMET believes that retroflexion never occurs except as the result of pelvic inflammation, and that nature may and frequently does effect a cure by gradually loosening and absorbing the adhesions. These women are just as liable as others to conceive, if the tubes are open, but they are more apt to abort. In half a dozen gravid cases that he had seen where the uterus was bound down, postural manipulations and packing had enabled them to go to full term. Digital manipulation was apt to induce abortion by too much violence. The better way was replacement in the knee-chest posi-

tion, introducing the speculum first into the rectum to inflate it, and then into the vagina. The pessary is risky. Packing with wool and vaseline answers best, and he finds few cases that cannot be relieved by its careful use.

DR. SKENE said Martin's careful paper confirmed what he had previously believed. He would, however, never think of extirpating a uterus for incarceration, does not think it rational, and does not see how Martin could have even suggested it.

DR. HANKS agreed with Dr. Skene. He cited some difficult cases of reposition of the incarcerated uterus, making the point that patience must be employed in difficult cases. He doubted the advisability of pessaries, but believed in packing.

DR. SKENE said Peaslee's flexible ring is perfectly safe for use after replacement.

DR. KELLY would try gentle means, then leave to nature for a while, and then would not hesitate to do laparotomy and raise the uterus up.

DR. CHADWICK was rather surprised at the desperate means advised. He always had found the uterus replaceable. Advised repeated gentle manual and postural replacement.

DR. BOLDT does not think these desperate measures should often be chosen rather than abortion, but as cases are recorded where death has been the sequence of irreducible incarceration, they may be sometimes advisable.

DR. CHADWICK asked, Had any of the members ever seen a case that required operation?

DR. MANN had had one case where he was obliged to induce abortion, and knew of another.

DR. KING said the first case ever recorded (by Hunter, in London) died from the effects of the condition.

DR. E. C. GEHRUNG, of St. Louis, read a paper entitled

RESULTS OF SUPPRESSION OF MENSTRUATION.

The author maintains that menstruation under certain conditions is a hemorrhage, and consequently a waste, which frequently causes impoverishment of the blood and engenders anemia with its many morbid consequences; that this bleeding can be lessened, or even arrested, as the case may be, not only with impunity, but usually with a highly beneficial result in lessening the anemia and curing its consequences, the argument being that "blood saved is equal to blood gained." The vaginal tampon is the repressive agent used.

Dr. Gehrung records a series of interesting cases and cures in corroboration of his views.

DR. BOLDT differed with Dr. Gehrung in many points. He could not consider menstruation a pathological condition or the loss of blood harmful. He believed, however, that the treatment had a limited field of value.

DR. ARTHUR W. JOHNSTONE, of Danville, Ky., thought Dr. Gehrung mistaken in considering menstruation a pathological condition. It is useful and normal, and as vitally necessary to the well-being of the organism as is respiration. He would not use the tampon to repress menstruation, unless he could at the same time cork the Fallopian tubes. It is the pelvic sympathetic nerve and the spinal cord that control menstruation, and not the vascular system. The

severing of the pelvic sympathetic nerve, and not the removal of the appendages, is what stops menstruation after operations on the tubes and ovaries. Many cases of menorrhagia are not due to pathological conditions of the uterus, but to pathological states of the broad ligaments and pelvic tissues affecting the pelvic nerves. The pseudomenstruation after laparotomy is caused by the pinching of the sympathetic nerve fibres, in the same way that ligation of the chorda tympani causes a flow of saliva. The functions of the pelvic sympathetic are of extreme interest and worthy of extended study. He should consider Gehrung's method abnormal, dangerous, and apt to produce hematocele or other trouble.

DR. JACKSON said the theory of Gehrung might be wrong, but the results were correct. He has employed the method for years, and has seen no evil results, but only great benefit. He cannot see why excessive loss of blood should not be prevented—the term excessive being relative. He obtains permanent beneficial results, and indorses and commends the method.

DR. GEHRUNG said he did not seek to repress normal menstruation, except where the patient is very anemic and cannot afford any great loss. He claims, not that the theory is correct, but that the results obtained are. The opposition shown is entirely theoretical, but his results are facts.

DR. H. J. BOLDT, of New York, read a paper on

INTERMEDIATE TRACHELORRHAPHY.

Not all cervical lacerations are productive of pathological changes, and the time varies at which symptoms show themselves, but, knowing the symptoms which will probably be entailed by the presence of an extensive tear, it is rational to pursue a course that will prevent them.

The ideal method would be to sew up all tears immediately after delivery, but for many and obvious reasons this is impracticable. In patients operated upon long after the occurrence of the injury, when the pathological changes, and especially hyperplasia, have existed several years, the return to the normal is not so likely to result as when the operation is done earlier.

For these reasons "intermediate trachelorrhaphy" is best. This is the repair of the injury after the cessation of the lochia and before the occurrence of pathological changes.

This operation the author has done twenty-six times with most gratifying results.

The usual surgical precautions are taken, and the operation is done in Sims' position; the cervix is steadied with a tenaculum, and the cervical canal noted and avoided in the denudation. The surfaces of the tear are then *carefully* and thoroughly scraped raw with a very sharp instrument, every portion being denuded, including the cross tears of a stellate laceration, should such exist. Sutures of No. 2 catgut are then deeply and carefully introduced, so as to bring all parts of the wound into accurate apposition without undue tension anywhere.

The advantages claimed are:

An anesthetic is required only in extremely nervous women; the operation can be done in the physician's office, if desired.

It is absolutely free from danger if properly performed and the contra-indications borne in mind.

The patients can go about as usual after the operation has been done, though in private practice they are usually made to lie down for several hours.

No appreciable tissue is lost, which is one of the chief reasons why the operation is urged.

DR. BACHE EMMET believes that with careful antisepsis after labor and during the puerperium many lacerations are naturally healed. Boldt's method would do away with much subsequent trouble from the exposure of the eroded surfaces, the subinvolution, endometritis etc., but he would not advise it unless the tear were very large. Office operation is dangerous and it would be wrong for the Society to countenance it. All obstetricians are not expert gynecologists. Preliminary treatment is important. He thinks the parts too friable for suturing so soon after labor, and that they would not stand the strain of the sutures. Boldt's ideas are dangerous for the profession in general.

DR. SKENE thinks the views of Emmet as he advanced them cannot be improved on, and that there is no present need for discussing the matter. He is exceedingly opposed to the risk of doing these operations in the office.

DR. B. F. BAER, of Philadelphia, did not believe that the operation should be thought so slight. He would not do it without anesthesia. If laceration is always a lesion, then it is proper to close it soon, as Boldt advises, and not to wait for the chronic hypertrophy and endometritis to follow.

DR. T. A. EMMET is still learning. He now thinks that Eve had a laceration, and every parous woman since. The operation for its closure, to be effective, is a serious one, and should not be done without sufficient reason. During the puerperium, if there is no sepsis, nature will beautifully repair the injury which may have occurred during labor. If there is trouble after labor, then is the time to cure the woman. Care for it yourself; do not trust a nurse; keep the parts scrupulously clean; use iodine; keep the patient under the best hygienic conditions, and usually she will do well. No one can tell soon after labor what tear may or may not need operation. Cases are dangerous where the extensively torn cervix remains soft and the woman bears many children in rapid succession, for such lacerations are apt to eventually become epitheliomatous. They need early treatment, and, if not much relieved, operation. Where there are adhesions or pelvic thickening you may operate, but must be careful not to drag down the uterus. He lays great stress on the importance of closing the laceration thoroughly, and not merely by a superficial approximation of the edges, leaving an ununited cavity within. He does not exaggerate when he says that he closes more of these cavities made by other men than he does of primary tears.

DR. ENGELMANN says that there is a large class of cases where laceration is present without symptoms. Some of these never give symptoms; others, after eighteen months, show decided nervous symptoms. Why should we not operate in these cases when the symptoms first begin to appear? He vigorously protests against operation in the office.

DR. BOLDT, in closing the discussion, still held his ground, that if laceration is marked three months after confinement it will not close by itself, and that this method of his, skilfully done, will remove the condition easily and safely. He does not advocate operation in the office or without anesthesia, but says it can be safely done.

DR. T. A. ASHBY, of Baltimore, then read a paper entitled

THE VALUE OF LAPARATOMY IN THE DIAGNOSIS AND TREATMENT OF
MINOR FORMS OF INTRA-ABDOMINAL AND INTRA-PELVIC DISEASES.

The author began his paper with the statement that no fact was more conspicuous in a study of the history of laparotomy than the unwarranted prejudice this procedure has had to combat in the various stages of its evolution and growth to its present position of acknowledged usefulness as a surgical resource. The development of laparotomy to its present status he attributed to the acceptance of two facts: *first*, that the peritoneum will safely tolerate surgical interference; *second*, that absolute cleanliness is imperative to success in abdominal work. The limitations of laparotomy were for years fixed by opinions founded upon ignorance and a misconception of facts. Experience has demonstrated that the procedure is a surgical resource, admissible and valuable in exact ratio to the judgment, skill, and experience which call it into operation for diagnostic and clinical purposes. The limitations of laparotomy proceed from those obscure intra-abdominal conditions which cannot be reached by ordinary methods of diagnosis and treatment. In the diagnosis of minor forms of intra-abdominal disease, laparotomy was made necessary if a curative method of treatment was sought. It was admitted that many patients suffering from these obscure and minor intra-abdominal conditions could drag along months, and perhaps years, of invalidism or semi-invalidism under ordinary methods of treatment, but that laparotomy presented the only rational and direct route to the cure of such conditions. He claimed that the surgeon was in duty bound to resort to this course when the circumstances, surroundings, and wishes of his patients made a curative treatment desirable. The failure to employ a laparotomy in the diagnosis and treatment of minor conditions came from the surgeon, and not always from the standpoint of the patient. He advocated conservatism and a careful study of such cases before resorting to a surgical expedient, but argued that an ultra-conservatism lay at the very root of the most fatal forms of laparotomy work. A comparison of former with present methods of abdominal work proved most conclusively that the mortality is in direct ratio to the promptness, decision, and skill of the operator. It has been shown that abdominal section is not, *per se*, the cause of mortality, but the conditions for which the section was undertaken—conditions which were allowed to assume the worst relations and influences towards the patient before interference was deemed advisable. The essential conditions to success in

laparotomy hinge upon the gravity of the condition for which the procedure was instituted.

If the laparotomy has been made as an aid to diagnosis, it becomes, in the hands of the trained operator, a procedure with the slightest degree of casualty. Experience goes to show that a simple abdominal section should have no mortality. Laparotomy as an aid to diagnosis assumes a graver significance when the condition thus revealed demands operative interference, but the gravity of the section will under these conditions bear the closest relation to the lesion found and to the circumstances under which its removal is undertaken. If the operator has permitted these lesions to assume the most complicated relations before resorting to the section, he has by this course of action increased the risks and dangers incident to the laparotomy, and he should charge this element of casualty to his methods rather than to the section. Thus a simple section as an aid to diagnosis is *per se* a simple step, and only approaches the nature of a hazardous operation when the conditions found require removal. The graver operation owes its gravity to the conditions which have been assumed prior to the section and to the circumstances under which it has been instituted. Approaching a laparotomy with this understanding of its dangers and advantages, its value is made apparent in a large range of conditions as a curative measure, as it were superseding the more conservative measures which aim to palliate minor troubles. The minor intra-abdominal diseases were classed under the following heads: 1st, Inflammatory; 2d, Structural, (a) morbid growths, (b) ectopic pregnancy; 3d, Neuralgic; 4th, Changes of Position; 5th, Hemorrhagic. Under each head the minor troubles observed were discussed on an argument advanced in favor of laparotomy in the diagnosis and treatment of the same, where indications warranted a surgical intervention in such conditions. The pathology of tubal inflammation and pelvic abscess was presented in contrast with former opinions upon this subject, and laparotomy was suggested as the proper line of treatment for such conditions the very moment the expectant treatment was observed to be in fault. Minor intra-pelvic growths were at the root of intra-pelvic troubles in certain cases, and were capable of creating symptoms out of all proportion to their apparent gravity. Laparotomy was advocated as the only correct way of diagnosing and removing these conditions. Primary laparotomy was advocated in the treatment of ectopic gestation the very moment this condition was strongly suggested or actually demonstrated. Ovarian neuralgia was regarded as the most frequent form of dysmenorrhea, and laparotomy was advocated as the only curative plan of treatment in the worst varieties of this trouble. The circumstances, surroundings, and physical condition of many women suffering from ovarian dysmenorrhea made the curative plan of treatment necessary, and removal of the ovaries was the essential aim of such treatment. The correction of displacements of the kidneys, ovaries, and uterus presented a field for the extension of laparotomy work in

a direction which is yielding the most satisfactory results. Intra-abdominal and intra-pelvic hemorrhage, from whatever cause, opened the door to successful results through an abdominal section which should succeed other methods of dealing with these conditions. Minor hemorrhages and small blood clots within the pelvis were often the cause of pain, inflammation, and septic processes, and when symptoms could not be referred to other known causes a laparotomy should be instituted to ascertain and remove the offending trouble. Instructive cases were related to illustrate the value of laparotomy in the foregoing conditions. The conclusions reached were that the dangers of laparotomy had been exaggerated, the difficulty of its performance overestimated, and its value in diagnosis and treatment underrated. Its claims as a surgical expedient are based upon sound logic and rational assumptions, and sustained by a growing and already extended experience.

Third Day—Afternoon Session.

DR. EDWARD WARREN SAWYER, of Chicago, read a paper on

PARTIAL ROTATION OF THE OVUM IN EARLY PREGNANCY AS A CAUSE
OF PLACENTA PREVIA.

The ovum may be partially detached from its site without necessarily producing abortion.

The ovum may then rotate to a limited degree, turn a part of its surface to a lower uterine zone, and reattaching itself produce placenta previa.

Two illustrative cases are cited in support of the foregoing propositions.

CASE I.—A patient met with a jarring accident so early in pregnancy that she did not yet know she was gravid. This was followed by pain and a slight bloody flow for a few days, but pregnancy went on nearly to term, when violent vaginal hemorrhage occurred, and on examination placenta previa marginalis was found. The patient was safely delivered by forceps of a dead child. The cord was attached to the edge of the placenta.

CASE II.—Very early in pregnancy the patient, a primipara, stepped heavily from a chair and was severely jarred. This was followed by a slight bloody flow for a few days, but pregnancy went on to near term, when Dr. Sawyer was called for pain and hemorrhage, and on examination found the mother in labor with the edge of the placenta and vertex presenting. Fetus born alive. Mother made a good recovery. Cord attached to edge of placenta.

The peculiar histories of these cases, together with the velamentous insertion of the cords, suggested the following explanation: At a very early period of pregnancy, while the chorion is still villous, the ovum may by some accidental means become partly detached from what would have been the area of the placental site, the detached portion rolling away from the uterine wall and becoming

atrophied, while at the same time a fresh portion of the chorion comes in contact with the uterine wall lower down, and develops there, forming a lateral placenta previa and a lateral insertion of the cord.

DR. A. F. A. KING, of Baltimore, Md., said Dr. Sawyer was fortunate in his choice of a subject, concerning which but little was really known. He thinks Dr. Sawyer probably perfectly correct in his hypothesis, except that it would not explain complete placenta previa. He had searched the voluminous literature of the subject, but had found nothing of any great interest, except that relating to the old theory of total detachment. He questioned if all battledore placentæ were not produced according to Sawyer's hypothesis, and said the thanks of the Society should be extended to him for his very novel idea.

The paper was further discussed by DRs. KOLLOCK, HARDON, JEWETT, and SKENE.

DR. SAWYER, in closing, said he thought an ovum entirely detached would be cast off as a foreign body. In complete placenta previa, there is always a history of previous disease. Very early in pregnancy, during the first fifteen days, the allantois is projected from the embryo towards the periphery, and wherever it strikes the placenta is formed. Velamentous placenta may be caused by the allantois not coming completely in contact with the uterine wall, and becoming partly atrophied. He is diffident in putting forth his views, because they are drawn from only two cases.

DR. CORNELIUS KOLLOCK, of Cheraw, S. C., read a paper on the subject of

THE PROTECTIVE INFLUENCE OF VACCINATION DURING THE INTRA-UTERINE EXISTENCE OF THE FETUS.

That the germs of infectious disease, when introduced into the systems of pregnant women, do pass into the circulation of the fetus and produce there their characteristic effects, may now be said to be an established fact, as proved by the presence, for instance, of variolous pustules at birth, or evidences of undoubted erysipelas or scarlatina, as in the case reported by Saffin in the *N. Y. Medical Record* of April 24th, 1886.

The existence of congenital malarial manifestations has been questioned, but Kollock, who has lived in a malarial district, has often seen undoubted instances, at birth and during the first days of life, some remittent, but most intermittent in form.

Since the transmission of disease germs from the mother to the fetus seems to be an assured fact, the question arises: Will intra-uterine vaccination impart to the fetus an immunity against variola? To try and answer this question, and to contribute to the knowledge of the subject, Kollock has since 1863 vaccinated 36 pregnant women, of whom he has record; 14 were primiparæ and 22 multiparæ. All the children were vaccinated, and where it failed to take the operation was repeated several times. The results obtained showed that the physical or mental condition of the mother did not, but that the

period of gestation and number of the pregnancy did, greatly influence the protection afforded. In the 14 cases of primiparous women, vaccination failed on the children of only 5; in the 22 cases of multiparous women, it failed on the children of 16. The primiparous mothers on whose children vaccination failed were vaccinated at a very advanced period of gestation, over eight months. In the multiparæ, also, the later the vaccination, and the greater the number of previous pregnancies, the greater the chances of protection to the child. This fact Kollock explains by the fact that the nearer the gestation is to its end the more vigorous is the utero-placental circulation, and that with each succeeding pregnancy the number and calibre of the vessels increase.

DR. SAWYER said the subject was of peculiar interest to him, as he had been for ten years an official of the Chicago Health Board, and during that time had had over fifteen thousand children vaccinated. Out of this number there were many children who could not be vaccinated successfully, and on inquiry in these cases he had always found that the mother had been vaccinated or exposed to small-pox during her pregnancy. He would go even further in his belief than the essayist.

He had very definite ideas about the susceptibility of people to vaccination. The idea that it is necessary to revaccinate every seven years is absurd. His experience of over seventy-five thousand vaccinations had shown him that it was usually possible to vaccinate an individual twice—once in infancy, and once after puberty.

DR. J. C. REEVES said that malarial poisoning in children less than forty-eight hours old did not manifest itself by a chill, but in severe cases might show itself as a convulsion. This was his experience and agreed with the literature on the subject.

DR. KOLLOCK differed with Dr. Reeves. In his locality he often saw the "little beggars" shake most vigorously. He was much impressed with Dr. Sawyer's statements.

DR. JAMES R. CHADWICK, of Boston, reported a case of

NEPHROTOMY FOR REMOVAL OF CALCULUS OF KIDNEY.

The patient had a history of renal colic, epigastric pain, and irritable bladder since a miscarriage in 1883. In 1885, she was seen by Prof. Wood, who found blood, mucus, and calcic oxalate in the urine. There was not much cystitis at this time, but suspicion of a calculus. The symptoms continued, and the patient saw several very eminent surgeons, from whom she had records showing much the same condition of the urine. She had now been under Dr. Chadwick's care for several years, and great pains had been taken to secure a correct diagnosis. She was considered to have a renal calculus, and two months ago nephrotomy was decided upon. A lateral lumbar incision was made, the kidney easily exposed and examined, but no stone found.

Subsequent to the operation there was no colic and no calcium oxalate for four weeks, when both reappeared after disturbing influences which caused the patient severe mental worry. The occa-

sion for this worry had been long continued, and he now believed it to be the entire cause of the patient's symptoms.

A condition he had noted during the operation was the extreme softness of the perirenal fat, which allowed the kidney free movement. We must remember that this condition is natural, that the kidney is normally somewhat movable, and that so-called movable kidneys are only those where the degree of movement is excessive. In cases of true movable kidney, it is nearly always the right one that is affected.

The operation of nephrotomy is simple and not particularly dangerous, if it be done early before pus appears in the urine; after the appearance of pus, the mortality becomes excessive (eighty-three per cent).

His case showed the great difficulty of diagnosing renal calculus, but was not the only one in which nothing was found on operation. Out of thirty-five cases reported, in thirteen no stone could be found, though the patient complained of the typical symptoms. In several cases, the symptoms disappeared after operation, even though no stone could be found. Tiffany had reported a case of nephralgia cured by incision of the capsule.

DR. CURRIER recalled a somewhat similar case, in which the passage of a calculus the size of a pin's head had relieved the symptoms. Could not such a small calculus have existed in Chadwick's case and have been overlooked?

DR. KOLLOCK cited a case.

DR. ENGELMANN had observed cases similar to Chadwick's, caused by reflex nervous influence from uterine disease. These cases had all the symptoms except blood in the urine, and after a couple of years, when the uterine trouble improved, the symptoms ceased. In an operation he had witnessed, no stone was found, but the colicky pains afterwards disappeared.

DR. GARDNER, of Montreal, noted a case in a man where on operation no stone was found, but where the symptoms disappeared for several months and then reappeared. A second operation found the stone and cured the case.

He agreed with Chadwick concerning the movability of the kidney.

DR. CHADWICK thought that any calculus could not have been overlooked in his case, and that her condition had been caused entirely by mental worry. Great pains had been taken in the diagnosis.

The following papers were then

READ BY TITLE:

A Case of Interstitial Pregnancy—Rupture of the Uterus and Laparotomy, by R. Stansbury Sutton, M.D., of Pittsburgh.

Electro-Therapeutics in Gynecology, by G. Apostoli, M.D., of Paris.

A Contribution to the Clinical History of Cystic Degeneration of the Ovaries, by R. B. Maury, M.D., of Memphis.

A Brief Report of my own Abdominal Work for 1889, by R. Stansbury Sutton, M.D., of Pittsburgh.

Strictures and other Obstructions in the Vaginal Tract, and their Treatment, by H. F. Campbell, M.D., of Augusta.

The Effect of Ergot upon the Parturient Uterus, by John Goodman, M.D., of Louisville, Ky.

In Memoriam, DR. ELLWOOD WILSON, by Wm. H. Parish, M.D., of Philadelphia.

The Society then adjourned.

The following gentlemen were present as the invited guests of the Society: The members of the Obstetrical Society of Boston, and Dr. Weeks, of Maine; Dr. Virgil O. Hardon, of Atlanta, Ga.; Dr. A. E. Moseley, of Baltimore, Md.; Dr. Brooks H. Wells, of New York; Dr. H. M. Cutts, of Boston; Dr. H. Robb, of Philadelphia; Dr. Gardiner, of Montreal.

The officers for the ensuing year are:

President, John P. Reynolds, M.D., of Boston.

Vice-Presidents, William M. Polk, M.D., of New York, and Eli Van de Warker, M.D., of Syracuse, N. Y.

Secretary, Joseph Taber Johnson, M.D., of Washington, D. C.

Treasurer, Matthew D. Mann, M.D., of Buffalo, N. Y.

Other members of the Council, Dr. Wm. Goodell, of Philadelphia; Dr. W. H. Baker, of Boston; Dr. Bache Emmet, of New York; Dr. B. B. Browne, of Baltimore.

The following gentlemen were elected to membership:

Honorary Fellows, Dr. Charpentier, of Paris, and Dr. Robert P. Harris, of Philadelphia.

Fellows, Dr. F. H. Davenport and Dr. Sinclair, of Boston; Dr. J. M. Baldy, of Philadelphia; Dr. Henry T. Byford and Dr. W. W. Jaggard, of Chicago; Dr. William E. Ford, of Utica, N. Y.; Dr. Andrew F. Currier and Dr. Clement Cleveland, of New York.

The fifteenth annual meeting will be held in the city of Buffalo, beginning on the *third Tuesday* in September, 1890.

B. H. W.

**PROCEEDINGS OF THE
SECOND ANNUAL MEETING OF THE
AMERICAN ASSOCIATION OF
OBSTETRICIANS AND
GYNECOLOGISTS.**

HELD IN CINCINNATI SEPTEMBER 17TH, 18TH, AND 19TH, 1899.

(ABSTRACT.)

The meeting was called to order at ten o'clock A.M. by **PRESIDENT TAYLOR**. The

ADDRESS OF WELCOME

was made by **Dr. C. G. COMEGYS**.

Dr. E. C. MONTGOMERY responded.

The opening paper was read by **Dr. A. VANDER VEER**, of Albany, N. Y., and was entitled

CONGENITAL SINUS OF THE URACHUS.

The author reported a case of this rare condition. **Miss H. N.**, aged 20, had suffered, from birth, at irregular intervals, from profuse, offensive discharge from umbilicus, accompanied by sickening sensation, so that weight of clothing was painful and all active exercise precluded. Excretions from parts above navel were at times sebaceous in character, very offensive, and excoriated the parts somewhat.

Under anesthesia, a probe was passed into a sinus three inches toward superior fundus of bladder. Dividing tissues from linea alba down to subperitoneal space revealed surprising length and depth of sinus. Parts were carefully incised, sinus thoroughly opened up, and, after free curetting, lower portion was closed with sutures, and upper part dressed with iodoform gauze and allowed to granulate. Union was perfect and followed by complete recovery of patient from all previous trouble. Recovery undoubtedly the result of operation, as previous treatment, although carried on in most intelligent manner, effected no relief.

Dr. Jos. Price, of Philadelphia, said: I have personal knowledge of one case that I cannot call congenital sinus of the urachus. As the doctor has said, the cases are few. The case I will briefly report is one in my own experience, the trouble developing in the woman shortly after childbirth. She became a widow and remained so ten years, having during this time superficial abdominal trouble in the region of the urachus. Finally drainage was established at the umbilicus, giving exit to quite a large quantity of pus. She came into

my hands, and I incised to the pubis beneath all the cheesy disorganized structures, leaving, as I feared at the time, a sinus passing around to the left. Later, I was compelled to incise deeper and irrigate; the second operation brought about a perfect cure. She had been married a second time, some five years, without conceiving. It was curious that she should at once, after the second operation, conceive and give birth to a fine and healthy child. She suffers pain about the left ovary.

Some of my friends have referred similar cases to me recently and have been troubled to know how to interfere with them, as the trouble is quite extensive, there being suppurating cysts of the urachus.

DR. L. S. MCMURTRY, of Danville, Ky., reported

A CASE OF EXTRA-UTERINE PREGNANCY.¹

DR. W. H. WATHEN, Louisville, Ky.—At the present time, to attempt to destroy an extra-uterine pregnancy by an electrical current is very popular with some of our Americans and with some foreigners. I am on record as positively opposed to this treatment. First, because I believe it is only exceptional, if ever, that we can tell positively that the woman is pregnant early enough to use electricity to destroy the embryo. Second, if we succeed in diagnosing the extra-uterine pregnancy early enough to destroy it, then I doubt the propriety of doing so, because we leave a condition that is not much better than the impregnation itself. While we destroy the child, we leave a foreign mass that places the woman's life in constant jeopardy, and it at any time may be sacrificed. Then the only rational way of treatment is surgical treatment, and the removal of the product of conception, the gestation sac, and all the contents of blood, etc., that may be present. Even if we diagnose pregnancy prior to rupture, if we are going to do anything in the way of destroying the continuation of impregnation, then this I conceive to be the most rational and the most successful treatment. The danger to the woman then, I conceive, would be far less to cut down and take away the gestation sac than to attempt to destroy the vitality of the embryo by electricity. Since we understand the pathology of this subject better, we can arrive at better conclusions as to the proper treatment indicated. Formerly we had a great many cases of abdominal pregnancy and no very accurate data to tell us where this ovum first implanted itself, and just where the vessels penetrated the maternal structures; we were at sea as to just how to operate. We remember that Tait tells us that he bungled in his first operation, because he did not know what to do. Now we recognize the fact that all cases are primarily tubal, and that it is implanted afterward on other structures. We must go down to the foundation, to the beginning of these evils, and ligate them there, and we control the hemorrhage. Having seen but few cases, and having operated on possibly none, I will simply relate the case that I have but recently operated on, that was probably extra-uterine pregnancy, though, being in great haste to get the train, I did not examine the specimen. I was called into the country to operate for ovarian tumor, but I found it was not that. I found a hard substance extending to the under surface of the liver, with obstruction of the bowels for ten days. Making the section, this hard tumor was found to be in the folds of the broad ligament. Removing the tumor, I traced it down

¹ See page 1042.

into the broad ligament, narrowing down to a diameter not exceeding two inches; the Fallopian tube destroyed; even the folds of the broad ligament separated an inch on each side of the uterus. The uterus was enlarged as much as at three and a half months of pregnancy, every symptom of pregnancy existing. I do not give this as a case of extra-uterine pregnancy, but the symptoms, I think, point in that direction. I regret exceedingly that in the hurry I did not have the specimen examined. I wrote back to the country, but the specimen had been destroyed. This case impresses upon us the importance of the suggestion of Dr. McMurtry, that we ought to operate early in cases where we have internal hemorrhage and suspect extra-uterine pregnancy. When the abdomen was opened, a great extent of bowel was found to be almost gangrenous. The woman died that night or the following day.

DR. E. E. MONTGOMERY, of Philadelphia.—I cannot too highly commend the promptness with which Dr. McMurtry performed the operation in the case he has related to us. Prompt operation, he says, in cases where laceration of the tube takes place, is the only relief for the patient. In such cases, the danger of fatal hemorrhage is so great that early operation is clearly indicated. In many cases, we find the hemorrhage active, so that it is not unusual for the patient to die within twenty-four hours. We find in all such cases the patient collapsed until nearly in a state of syncope; then the patient revives under the influence of stimulants or natural forces, and then we have the hemorrhage until a second syncope results.

With regard to the particular case before us, I do not think it is necessarily indicated that it was a rupture of the tubal sac preceding the hemorrhage. We find in many cases that as the tube becomes enlarged there is a partial rupture; in such cases, we have simply the pain and a slight amount of plastic exudation and peritonitis resulting, simply gluing the surface and reinforcing the sac. I cannot wholly agree with either Dr. McMurtry or Dr. Wathen, that electricity should not be considered in such cases; taking such a case for instance, if we had electricity applied at the time of the first rupture, the arrest of the growth would have been accomplished and the case gone on with complete relief of the condition. We know that we cannot always obtain the privilege of performing abdominal operations: that the patients shrink from them. In such cases are we to leave our patients to go without other methods of treatment, simply because we cannot procure the privilege of doing laparotomy? Are we to let go an operation which has proved of value in the hands of others? As to the use of electricity, experiments have demonstrated the fact that animals of even greater vitality than the embryo have been destroyed by passing the current through water in which the animal was swimming. Take cases known as tubal-ovarian. In these cases we find not unfrequently that the sac is formed, not only of the mouth of the tube itself, but becomes attached to the intestines. In such cases we find serious disturbance of the alimentary canal; in such a case as this, with the placental growth attached to the intestine, we find the removal attended with serious hemorrhage. We are unable to control the blood-vessels without applications that would endanger the intestines themselves. In these cases, by the application of electricity, we find the vascularity decreased, and the patient would stand a better chance for an operation later.

DR. A. VANDER VEER, of Albany, N. Y.—I think the conclusions of Dr. McMurtry are very correct, especially with regard to the rupture of the tube, and later to the rupture of the sac. These cases are

not, however, always so perfectly clear before as after operation. He reported one case of recovery without operation.

I will briefly relate a case that occurred in Pittsfield, Mass. Patient was married; had had one child; had complained for nearly two months; had ceased to menstruate for three months; consulted her physician on the 12th of January, 1889, stating she had some bladder trouble, as she supposed; the physician prescribed for her in that way. On the 20th he was summoned to see her, and she died in two hours afterwards. I told him I believed he had a case of extra-uterine pregnancy, and by all means to have an autopsy. It was a case where a prompt operation just as the hemorrhage began might possibly have saved her life. She lived some six or eight hours after the second call, which was eight days after the first call.

DR. J. H. CARSTENS, Detroit, Mich.—Some cases, it is said, you cannot operate on. The patients object. It is not the patients so much as it is the attending physician. He does not care about an operation and rather opposes it. I have never used electricity when I did not constantly dread that during the use of that current the sac would rupture. It seems to me that just when you are using the electricity you get a contraction of the muscles around there, and you are likely to rupture the sac at that time. There is no doubt but it will in some cases destroy the fetus. I have seen it do so.

DR. JOSEPH HOFFMAN, of Philadelphia, Pa.—I certainly have very positive notions on the certainty of diagnosis and value of electricity and necessity of it. In the first place, I take it Dr. McMurtry does not believe in the certainty of diagnosis, except as an accident. I think probably the most damaging blow to abdominal surgery has been the report of Dr. Thomas relative to the treatment of twenty-six or twenty-seven cases by electricity. I have gone over these cases with care. I must say that, looking at them in the light of diagnosis, I think they utterly fail. The question of diagnosis in most of them has depended on the question of rupture. Of the whole series reported, there are very few which have a probability of extra-uterine pregnancy without any ruptures having occurred, but must depend entirely on the diagnosis for rupture. Now, if we say we can diagnose the condition without rupture, we say a good deal that is not established by these cases. If operative treatment is only to be thought of after rupture, and these cases diagnosed after rupture, the whole argument on these cases fails, because it evidently has been put on after rupture. I think the whole argument is fallacious, and most of the cases diagnosed as extra-uterine pregnancy have probably been something else.

A word as to the possibility of exact diagnosis. A woman had a child fifteen months old, so that a long previous period of sterility was not to be thought of. She had menstruated regularly after the child had been born, and only missed one period. Here was no possibility of diagnosing extra-uterine pregnancy from ordinary symptoms. She had a pus tube on the other side. Nobody could tell what I had until after the operation. In fact, after the operation it was a study to tell where and how the whole thing had been emptied. The woman recovered without any fistula—I think not even a fecal fistula. The matter of treatment, I think, resolves itself down to the importance of early eradication of any discovered mass in the pelvis. If the lesion is allowed to remain and complications to go on developing, as they must, by growth of the placenta, we are

endangering the life of the woman, and by electricity we are tampering with the life of the woman, and leaving in the pelvis a substance which is more dangerous than the primary growth, and as the time advances the danger increases.

DR. GEO. H. ROHÉ, of Baltimore, Md.—Several statements have been made here as if they were demonstrated facts; I propose to question several. One of the statements made is that a diagnosis of extra-uterine pregnancy is never possible, or rarely possible, until after the rupture of the cyst. The fact is that it has been made before the rupture of the cyst and the verity of the diagnosis established by the post-mortem examination. I think that assertion must be taken with some allowance. Another inference that has been drawn is, that when the attack of violent pain and colic, which we assume to be a symptom of extra-uterine pregnancy, occurs, the rupture of the tube has already occurred. I do not think that is entirely established. Another inference drawn is that when the embryo has been destroyed, as claimed, by the electric current, then a foreign mass remains which is a constant source of danger. But the members of the Association will recollect that at the very early period at which the embryo dies it soon becomes dissolved. Smelly, I think, has stated that if a fetus dies within the uterus before three months it is extremely difficult to find the embryo at all.

DR. JOSEPH PRICE, Philadelphia, Pa.—I am delighted that this unique report should provoke so lengthy and thorough a discussion; the result is simply that refinement of surgery is going on in this direction, and will continue to go on, not in the hands of so few men as in the past. There are a few points in the discussion I want to allude to. First as regards the diagnosis. Scant or delayed periods are both exceedingly common in a variety of pelvic diseases. Deficient menses are wholly unreliable as a means of diagnosis in extra-uterine pregnancy. Again, I will throw out a delayed period of one or two weeks that you also find in small tumors, and it is exceedingly common to find masses on both sides, and even extra-uterine pregnancy on one and a tumor on the other. You will find an abundance of reported cases to back up this argument. Take these three cases alluded to, operated on in the same week. Bantock removed an extra-uterine pregnancy on one side and a pus tube on the other side. The other case, by Edis, ectopic gestation and small ovarian cyst on the other; this has been common. Only recently I have removed an ectopic gestation sac on one side and a diseased tube on the other. The indications were clearly for sudden interference, simply because there was a suspicion—paroxysmal pain, hemorrhage, collapse. I was correct, but it was simply a guess, I must say. I have recently had a conversation with Formad in regard to this question, as to how these cases die. Formad's cases die from rupture, from shock. There is much more hemorrhage in his cases than in the cases that go into the hands of the surgeon. Fothergill says a swoon often saves the patient from death.

Referring to a report of one of the colleagues of Dr. Rohé, I will allude to the celebrated Chadwick case. There was some doubt about the case, and a lengthy discussion took place regarding it; and this case is worthy of consideration. A number of Boston men saw the case. Electricity was finally used and the woman barely lived. Finally the fetus made its exit by the bladder; this was an electrical case.

In regard to how and when to operate, I hold there is but one time to operate—that is, primarily.

Dr. Thomas' record I consider about worthless. The Chadwick case amounts to nothing. The woman made a very narrow escape and the fetus made its escape into the bladder. The cases reported in Philadelphia as successes are still ill—those that lived. And probably some of us will have an opportunity to report those cases yet. I think in a few years surgery will settle this question. The cases will go into the hands of the surgeon with the old diagnosis, and, with the specimen in his hand, he will settle this question.

DR. X. O. WERDER, Pittsburgh, Pa.—My experience has been limited. I have had two cases. One was almost a typical case. There was sterility. Shortly after marriage she had pelvic trouble, and was sterile seven years. The last menstruation was a little over two weeks previous. Menstruation came and with it came cramp-like pains; they returned every three or four hours. When I saw her I found an elastic mass which I diagnosed extra-uterine pregnancy. When the abdomen was opened it was found full of blood. There never had been any symptoms of collapse. The rupture of the tube had never been diagnosed. I suppose the reason was that the flooding was of an oozing nature. The fetus was not found, though there was no doubt about its being an extra-uterine pregnancy.

DR. MCMURTRY, closing the discussion, said: I think we may consider it as absolutely permitting a dogmatic assertion, that no man can diagnosticate a case of tubal pregnancy previous to the time of rupture. If I were to see at the operating table a tubal pregnancy demonstrated after diagnosis, before the time of rupture, I would just simply consider it a happy accident. I do not think those whose experience is largest will pretend to diagnosticate a case of tubal pregnancy previous to rupture. Consequently I claim that all data in regard to electricity as a therapeutic resource previous to a rupture of a tube are absolutely worthless in consequence of this fact.

In the next place, I am going to claim that the diagnosis of extra-uterine pregnancy is not so very easy after the operation is done.

In regard to electricity, and the remarks of Dr. Montgomery, I simply want to emphasize what some have said—that if you do arrest the growth of the fetus in the Fallopian tube after the tube has burst, or before, you still leave inside the abdomen a body that may undergo suppurating changes; that can form adhesions with adjoining organs; and when you become driven to operation, after all, by relying on electricity, you have a case a hundred-fold complicated.

In conclusion, I wish to emphasize the importance of early operations in pelvic disorders. I think we are too much disposed to overestimate the dangers of an exploratory incision. They are comparatively trivial when compared with the danger of suppuration. I believe we should act promptly. We ought to take the responsibility of urging upon the family physician, upon the patient, the importance of early interference in these cases. One of the greatest difficulties we have to deal with is that the profession and people have not been pushed forward in these matters as they have in the East and as they have in England.

DR. CHAS. A. L. REED, of Cincinnati, presented a paper on

TREATMENT OF THE RUPTURED PARTURIENT UTERUS, WITH REPORT
OF TWO CASES.

He called attention to the lack of defined principles in the treatment of the ruptured parturient uterus, and held the obstetric writers.

and authors responsible for the confusion. The positions of Leishmann, Parvin, and Lusk were reviewed and declared to be but a trifle in advance of Trask, thirty years ago, and to be in violation of the well-established canons of modern surgery. He discussed the topic in reply to the following questions:

1. What shall be done with the child which is yet within the ruptured uterus?

2. What shall be done in cases of rupture of the uterus in which the child and after-birth have been successfully removed by the natural passage?

3. What shall be done in cases in which the child has been delivered, but in which the placenta has escaped into the abdominal cavity?

4. What shall be done in cases in which the child or the placenta or both, have escaped into the peritoneal cavity?

Two cases were reported: One in which abdominal section had been done, following the successful birth of child and placenta *per vias naturales*, and in which a piece of placenta was found in the rent. Recovered. The other was one in which section had been done eleven hours after the accident; the placenta was removed through the section; the rent involved both the anterior wall of the uterus and posterior wall of the bladder; death after fifty-four hours. The following were Dr. Reed's conclusions:

1. In cases of rupture of the uterus with the head presenting, delivery by the forceps should be attempted, but should be abandoned if not found easily practicable. Turning should not be undertaken, but the case should be at once recognized as one for either the Cesarean or Porro operation.

2. In cases of ascertained incomplete rupture, treatment should be by antiseptic irrigations and rest.

3. All cases of ascertained complete rupture should be submitted to abdominal section as soon as the condition of the patient with reference to shock will admit, and for the following purposes: (a) to explore the abdomen; (b) to remove all foreign bodies; (c) to cleanse the peritoneum; (d) to close the rent if the labor shall have been short and the uterus not seriously damaged; or (e) to remove the uterus if the labor shall have been long and that organ seriously damaged.

DR. JOSEPH HOFFMAN, of Philadelphia, Pa.—I have had one case of rupture of the uterus, and she died. I did it by turning. Right there you have a text that will preach a sermon such as Dr. Reed has preached. The whole subject of ruptured uterus and the questions of treating it can be written about and talked about as long as we please, and the end will be, if the rupture of the uterus is a serious one, the woman will die in nine cases out of ten. Antiseptics getting into the peritoneal cavity are just as likely to kill the woman as to kill the sepsis. The only satisfactory way is to go through the abdominal wall, and that is Cesarean section, or Porro's, which I think is preferable.

DR. JOSEPH PRICE, Philadelphia, Pa.—I fully agree with everything the doctor has said. I have seen two cases in consultation. One case was some years ago, and I urged abdominal section and was not supported by the physician in attendance, who disagreed with me, and called some one in who established vaginal drainage and lost his patient, and the abdominal cavity was found full of fluid. The other case was in my brother's practice. The rent was posterior, to the left, and about eight inches in length; the placenta and cord entirely in the abdomen. The fetus had been partly delivered; it lay about half through the rent. He did a very prompt Porro, but she sank some twenty minutes after she was placed in bed. It was my impression that transfusion would have saved this woman. Opium itself sometimes kills these patients. Many of the patients would die if we followed irrigation and drainage with opium. I desire to say that I fear opium very much in abdominal work.

DR. W. H. WATSEN, Louisville, Ky.—Over two years ago I reported a case of rupture of the uterus, in which I took very much the same ground, as regards treatment, as was so ably presented by Dr. Reed in the paper just read. I am fully in accord with the views of treatment in possibly every instance.

I think, as a rule, the amputation of the uterus is the simplest, easiest, and quickest method, and probably future results will demonstrate this to be the best; but there are instances where the improved Cesarean section would be indicated. Where the uterus had not sustained any great amount of traumatic injury, except in the rent itself, which is not a very long one, and where there is apparently a healthy condition of this surface—a smooth surface that will adhere with as much readiness as in the ordinary Cesarean section, where the opening has been made with the knife—in these cases I would commend the improved Cesarean section.

DR. X. O. WERDER, Pittsburgh, Pa.—I have had the misfortune to see two cases of ruptured uterus; one in Vienna was treated by vaginal drainage. The second case I saw in consultation four days before. The temperature was $102\frac{1}{4}^{\circ}$, pulse 150, and she was very sore. The discharges from the vagina were very offensive; the child was undelivered, the head presenting near the pelvis; the cervix not fully dilated, membranes ruptured. I suspected the physician in attendance had given ergot. The child was dead. I suspected ruptured uterus, though I could not feel it. The woman had to be delivered—that was evident. I thought the safest way was by craniotomy, and delivered the child without difficulty. The woman was a multipara and never had very much trouble, though she had tedious labors. After the child was delivered, we waited a considerable time for the placenta; the uterus had well contracted, but there were no labor pains. I then made slight pressure on the uterus. I made vaginal examination and found the placenta was not in the vagina nor in the uterus, but there was a rent almost over the iliac fossa. I delivered the placenta through the rent. I advised the parents and the physicians to have a Porro operation performed, as the uterus was certainly in a condition of sepsis. Her husband and the relatives objected. The only thing remaining was drainage through the abdomen. The patient died a few days after.

DR. R. L. BANTA, Buffalo, N. Y.—I agree with the writer in all he says.

DR. A. VANDER VEER, Albany, N. Y.—I do not believe the Porro is the operation we ought to do in all cases. There are cases where rupture occurs where everything is natural. There may be cases

when it is necessary a child should be born in the family. In those cases I believe Cesarean section should be done. It has occurred to me that it would be wise to trim up that ragged, irregular rent, as in the improved Snger operation.

DR. JOSEPH PRICE, Philadelphia, Pa.—A word in regard to that point. One would scarcely think of closing a lacerated or diseased tissue by bullet wound without trimming. The same rule holds good in all surgery: these ragged, contused rents should be made clean wounds, that the juxtaposition may be perfect and the healing rapid.

DR. REED.—The first criticism of an adverse character to which I desire to reply is one which strikes me with particular force. That was that in my fatal case, in which I already had peritonitis, I gave opium instead of salines. I may say that in all my cases of abdominal surgery it is my practice to give salines and to abstain from opium upon the first indication of a rise of temperature. In this case, it was the attending physician that gave the opium, and that was under extreme pressure from the patient, who was suffering.

Dr. Wathen has called attention to those cases of low-down posterior rupture as the ones best calculated to recover without operation, and calls attention to the ease and facility with which drainage from the abdominal cavity can be effected in this class of cases by virtue of location of the injury. My conception of this class of cases is somewhat different. The patient lying on her back will drain the uterus into the abdominal rather than the abdominal cavity into the vagina. This is largely a theoretical conclusion. It is my impression that the cul-de-sac in these cases occupies a position below the upper margin of the peritoneum.

DR. JOSEPH PRICE, of Philadelphia, read a brief paper on

INTRA-UTERINE CORD AMPUTATIONS OF THE FETAL EXTREMITIES.

The paper was briefly discussed by DRs. VANDER VEER, WATKIN, and CARSTENS.

DR. EDWARD J. ILL, of Newark, N. J., presented a paper on

THE FORCEPS AS A MEANS OF ROTATING THE HEAD IN LABOR.

He speaks of how seldom the forceps is used for this purpose in this country. He gives a historic review of the subject, names a number of authorities who apply the methods, among them Cazeaux and Tarnier, Scanzoni, Lusk, C. Braun, etc. He first speaks of the objections raised against this operation, and refutes them, showing why failures should occur.

He then speaks of the conditions which call for the operation, and the conditions which would oppose the use of the forceps in this respect. He then goes on describing the operation in the different vertex presentations.

He explains at length the Scanzoni and the Lange methods of occipito-posterior positions, giving preference to the former. He also speaks of the excellence of the use of the instrument for this purpose in face presentations, especially those where the forehead presents under the pubis, having seen three successful cases of this form.

He then presents an analysis of one hundred and eighty-two cases that had come under his notice, wherein he shows the excellence of the methods employed.

DR. R. L. BANTA, of Buffalo, N. Y., read a paper on

THE RECTIFICATION OF FACE PRESENTATIONS.

The application of the method considered necessitates that the head is not impacted in the pelvic cavity and that the cervix is well dilated.

In the first presentation, L. M. A., the face is on the right side of the pelvis and the trachelo-bregmatic diameter of the face corresponds to the right oblique diameter of the inlet (German nomenclature). As the head descends, the antero-posterior diameter of the neck, about three inches, is added to the depth of the cranium, about four inches in length.

Now begins the process of a body having a diameter of seven inches being forced through a passage of about four inches, which is accomplished by a great deal of force and moulding and only under certain favorable conditions. The bi-malar or transverse plane of the face, measuring a little over three inches across, now corresponds with the left oblique diameter, but on account of the smaller size of the diameter of the face there is left at the posterior part of the left oblique diameter a free space. It would seem, on first thought, if there were any manipulations to be made above the brim, it would be best to pass the right hand through this unoccupied space. But to reach the posterior part of the extended head, which, it will be seen, is one of the main objects to be attained, it would be necessary to pass the hand from one side of the pelvis to the other, over or under the body of the child, which for any practical purposes is impossible.

In order, then, to manipulate the occiput, the left hand is passed into the vagina and uterus (if need be) on the right side of the pelvis well back until it is stopped by the forehead or vertex. By now placing the fingers around the head or any part that can conveniently be grasped, only remembering to keep the hand in the position just described, enough force can be used, and only a small force is required, to rotate the head anteriorly about a quarter of a circle, when the chin will look posteriorly and the long diameter of the face will correspond with the left oblique diameter of the inlet. At the same time, or just before rotation—a very important point to remember—the head is pushed up so that the chin will be well above the brim. The face is now in the L. M. P. position, and there is left at the posterior part of the right oblique diameter a free space through which the hand is passed and placed over the occiput. The next step is to bring about flexion, which can, as a rule, be easily accomplished by placing the free or right hand over the abdomen of the mother and over the left internal hand. The presentation is now R. O. A. or the old second position.

The right hand is an important factor in this manœuvre, for it not only aids the left hand in flexing the head, but also helps to push the head well down in the pelvic cavity. If flexion does not readily occur, it is because the chin has not been forced high enough above the brim and is stopped at some point of the pelvic walls.

The forceps should not be applied if there is any fear that extension will again take place. A knowledge of the manner of proceeding in the position just described is the key to the other three.

With our knowledge of modern antiseptics, the introduction of a clean hand into the uterus through a clean vulva and vagina is entirely devoid of danger as far as carrying any septic material is concerned. Add to this a certain amount of skill which every practitioner is supposed to possess, and there is scarcely any doubt of the successful application of the rules just described.

DR. J. H. CARSTENS, of Detroit, Mich. —The only improvement I would suggest is to put the woman in the knee-elbow position, or at least an exaggerated Sims' position. In that way you can turn easier than any other way. I always give the patients chloroform. As soon as I have them under the influence of the chloroform, I stop it. Sometimes, where it is difficult to retain the head in its changed position, I have immediately applied the forceps, as the doctor suggests, and delivered the patient.

I perfectly agree with the doctor in the stand he has taken, and I think it is about time the general practitioner appreciated this proceeding. I can report some seven or eight cases, perhaps more, and in each of these the child was saved. That is more than I can say in cases where they were left alone.

DR. W. W. SEYMOUR of Troy, N. Y. —It has been my fortune to have in my own practice several face cases, and in some I have labored to bring about a change of the presentation to occipito-anterior position, in the way Hodge and others advised, introducing the right hand in the left side of the pelvis, the fingers over the occiput, and fingers against the brow; then, as pains came on, producing flexion of the head. If the occiput had well entered the pelvis, instead of attempting to produce change of the presentation from face to occiput, I preferred to, if I could, produce flexion by the vectis. I have used it in a good many instances.

DR. BANTA, closing the discussion. —The criticisms I have no objections to. If a man wants to wait and trust to nature in these cases, it is well he should do so. But if you can by simple and efficient method rectify them, I think it is better and safer to the mother and child. In regard to Dr. Carstens' remark about posture, I think you can do all that is necessary by anesthetic. It is hard to get a patient in the knee-chest position while under an anesthetic. You will certainly require a number of assistants to do so, and I think it is unnecessary.

DR. LLEWELLYN ELIOT, of Washington, D. C., presented a paper on

UMBILICAL HEMORRHAGE: ITS TREATMENT.

Its causes are careless ligation, traumatism, or physical defects. More cases occur among male than among female children. Including the figures of Dr. Eliot, two hundred and sixty-one cases have been reported since 1752.

The treatment of umbilical hemorrhage is both local and constitutional. The local means employed consist in a new ligature, compression, styptics, plaster of Paris, and the ligature en masse. Those of a constitutional character are good diet, calomel, sulphate of soda, iron, aromatic sulphuric acid, ergot, stimulants, and a general tonic course. Dr. Eliot advocates very enthusiastically the performance of a laparotomy and the ligation of the cord before its exit from the abdomen, and he believes that the number of cases recovering under this treatment would more than balance the risks assumed in doing the operation, but it must not be delayed too long.

Of the four cases he reports, two died after the employment of the usual remedies, one recovered, while on the fourth he made a laparotomy and passed a ligature about the cord. While this case proved fatal, he believes, from the fact of the bleeding having been permanently checked, that had the operation been made sooner the child would have recovered.

DR. AUGUSTUS P. CLARKE, of Cambridge, Mass., read a paper on

THE MANAGEMENT OF THE PERINEUM DURING LABOR.

In formulating the principles which have guided me in my own practice, I have been governed by the thought that, in securing the requisite degree of dilatation to insure safety to the tissues of the perineum and the uterine cervix, full and regular contractions of the fibres of the upper uterine segment must at all times during the second stage of labor be encouraged. When the fetus has made a rapid descent during the second stage of labor, the upper segment of the uterus loses, to a greater or less extent, the stimulus excited by the immediate contact and pressure within. It is during this particular period of labor that the force of the uterine pains will be replaced by contraction of the muscular tissues in the segment below. The muscular fibres of the lower segment of the parturient passages will contract, and not dilate, almost in direct proportion to the pressure imparted to them by the stimulating force of the impinging head or other presenting part. When any essential support to the perineal muscular tissue is made, either by the hand or by the employment of any kind of device, the effect will be only contrary to our expectation. The same or a similar result will follow whenever the force of the movement of the fetal head is sought to be restrained. The rhythmic action of the moderator muscles not being under control, the muscular tissue immediately above the point of the greatest resistance, acting with redoubled vigor, forces at length the head through the contracting and not dilating sphincter. As the head or other presenting part descends in the second stage, it will be found that the fundal segment of the uterine tissue gradually fails to act with the full force it did earlier in that stage; and that this failure of that segment to contract will continue more and more until the muscular tissue lapses into a state of inertia. To regulate the motor muscles, and to keep under full control the different sections of the

parturient systems, is easy of accomplishment when once their physiological relation is duly appreciated. In my own practice, during the second stage of labor I have been in the habit of exercising gentle pressure of the left hand over the body of the uterus. The hand is spread out fan-shaped, and by the employment of methodical manipulation every portion of the uterine tissue is easily brought under control and stimulated to contract at intervals more or less regular and uniform. In no case do I deem it judicious or proper to effect digital or manual dilatation of the vulvo-vaginal rings or introitus. Such dilatation can only be accomplished at the expense of the integrity of the levator loop and the transversi perinei, whose fibres unite in a tendinous raphe in the centre. Such attempts at dilatation can never result in relaxation of the muscular fibres of that part; it can only do more or less violence to the same, separating the central union of the transversi perinei, and weakening the support of the levator loop, and causing finally relaxation of the posterior vaginal wall. By the perfection to which the art of external palpation and manipulation has attained, we are enabled to forestall the occurrence of many accidents to the fetus, and the many peculiar positions and presentations which formerly took place when the diagnosis was largely dependent on vaginal examination. The careful study of the practice of palpation has developed a more profound knowledge of the forces involved in the process of parturition, and has taught that parturition itself is not so much dependent on the mechanical as on the conservatism of an energizing force resident within the nervous ganglia and plexuses controlling the muscular tissue. The so-called method of supporting the perineum by the application of the hand, either direct or by the intervention of a napkin to the parts, can never result in a conservatism of such vital force; for the perineal tissue, being in a state of contraction and not of dilatation, will only be stimulated to contract more and more firmly around the descending part, and to produce a more or less extensive laceration of the vaginal and vulvar rings. Attempts at restraining the descent of the head by interlocking of the fingers or by the exercise of pressure, or by other means devised, will also be futile as regards protection of the perineum, for the force of such pressure employed in the control of the descending head or other part will almost invariably be transferred immediately to a parallel of the segment just above which is already in a state of contraction. This will be the means of augmenting the irritability and contractility of that muscular tissue, and of endangering the cervical columns and inviting uterine laceration. The occurrence of such misadventure is usually followed by a perineal lesion. In reviewing the records of the history and conditions of one thousand consecutive obstetric cases which have occurred in my own practice, and which I treated according to the prevailing method of practice of supporting the perineum, I find that the percentages of perineal lacerations average for the primiparous 15.9, and for the parous 5.25. This rate

is exclusive of slight tears of the vaginal orifice and the fourchette. In an earlier series of such cases, the rate per cent was for primiparous 16.01, and for the parous 5.35. These figures, though large, compare favorably with those given by the eminent obstetricians quoted by Parvin. The author referred to states that Schroeder gives for the primiparæ 34½ per cent, and for the parous 9 per cent. Winckel gives 115 in 1,011 deliveries; Olshausen, according to the same authority, gives for the primiparæ 21 per cent, and 4.7 for parous; Hildebrandt 7½ per cent for all classes. In 400 deliveries, Swayne gives 31 for partial and 1 for complete laceration. Other statistics on this point could be introduced, but their import would be far from showing that the so-called methods of supporting the perineum are satisfactory. In 200 consecutive obstetric cases, managed according to the method advocated in this paper, there was not an instance of perineal laceration. In 50 other consecutive cases thus managed, there occurred only 1 perineal laceration. I was not called until the second stage of labor was far advanced, and at that time the perineum was swollen, rigid, and firmly contracting about the head, which was rapidly descending by the force of the tonic contractions of the lower segment of the uterus, while the upper segment was relaxed, having lapsed into a state of inertia. I could but feel anxious for the safety of the perineum, as only a brief period of time was left in which to prepare against the occurrence of laceration. There was not sufficient time for the successful administration of chloral or of morphia, nor even for an anesthetic, and any attempt to restrain the force of the oncoming head served only to increase the irregular contractions of the lower uterine segment as well as the muscular tissue of the perineum. I have no doubt had I been called at an earlier hour I should have been able to keep under control the contractions of the upper uterine zone, and by the use of opiates, chloral, or anesthetics the lower uterine zone and the perineum itself would have relaxed sufficiently to prevent a vaginal, vulvar, or perineal lesion. Before closing this paper, I would mention the occurrence of 60 other consecutive cases, including 14 primiparæ, without a perineal laceration. In all these, I was called early and was with each patient during the second stage of labor. One of these patients had had two previous confinements, in each of which there was perineal laceration necessitating immediate closure by sutures.

DR. X. O. WERDER, of Pittsburgh, read an essay on

**FLAP-SPLITTING AND PERINEORRHAPHY, WITH SPECIAL REFERENCE
TO TAIT'S OPERATION.**

He gave a brief résumé of flap-splitting operations, describing first Langenbeck's operation, which is the real basis of all subsequent flap operations.

Voss, of Christiania, was the first to perform a pure flap operation,

but his method, which is described, was not fully satisfactory, as in four cases recto-vaginal fistula was consequent.

Dr. Simpson's (Edinburgh) method is a great advance in perineoplasty, and his operation, which is much simpler in technique and better in results than the previous ones, is still recognized, having advocates not only in England but also on the Continent. Marcy's and Fritsch's operations have many advantages over others, and give good results.

The simplest and most successful of all is Tait's new method of perineorrhaphy, first described by Sanger, of Leipzig. Tait has modified his method of flap-splitting, which he reported in the Transactions London Obstetrical Society in 1879, at least four times, the principal difference between the old and newest methods being the preparation of the flaps, and especially the introduction of sutures, which in the old are introduced in the axis of the wound, while in the new all sutures are perineal, rectum and vagina requiring no extra stitching. The new operation is the ideal operation, especially for complete rupture of the perineum, in which its simplicity, rapidity of performance, and excellent results cannot be surpassed.

DR. JOSEPH HOFFMAN, Philadelphia, Pa.—An operation that is going to control the sphincter must heal by first intention or not control it. I cannot see how we are going to get anything out of an operation which deals only with the skin, except failure. So far as the Tait operation is concerned, I do not think Mr. Tait himself deserves any credit for originality in the operation. The operation was Simpson's originally, as I understand it, and has been modified, running from one degree of inefficiency to another. I do not think that pyemia in a simple perineal operation is justifiable. The original Tait operation, which was transforming a single slit into a transverse slit, causes excessive pain.

DR. JOSEPH PRICE, Philadelphia, Pa.—I have given this subject very considerable study and consideration. I have also seen a number of flap-splitting operations at home and abroad. These so-called partial successes, where the ends of the sphincter are not united, are of no advantage to the patients. You might just as well put a tight pair of drawers on them; it will do just as much good.

Emmet has taught us more than all the rest of the world in plastic work, and is fifteen or twenty years ahead of the rest of the world. In the splitting operation, you must surely expose the ends of the sphincter muscle if you are going to bring them into apposition. I look upon the flap-splitting operation as a retrograde step. I am surprised that more of the patients do not die of tetanus after the use of the bayonet-handled needles.

DR. W. H. WATHEN, Louisville, Ky.—A year ago I read a paper before the Association in which I remarked that I knew of no subject in which there was so much scientific rubbish that we had to push away before we got down to the kernel of the subject; making a very simple operation, one that ought to be almost universally successful, seldom correctly or successfully performed. I have never failed in getting what might be styled a good result, and generally a perfect result. Patients have reported to me, one, two, or three years afterwards, that they had no further trouble at all. To Emmet

we owe the principle that enables us to get control of the feces by union of the sphincter muscle, and that is the great desideratum.

The flap-splitting process supplements Dr. Emmet's operation, if Dr. Emmet's operation is done successfully. I send my patients home in fourteen days, without leaving in any suture. I do not think it is necessary to leave a catheter in the bladder, or even to draw the urine by the catheter.

DR. J. H. CARSTENS, Detroit, Mich.—I agree with Dr. Wathen that the use of the catheter is not necessary at all. There is no one operation that is absolutely correct; but we have to make use of two or three different ideas of different authors in one operation.

DR. WERDER.—I have nothing to say against Emmet's operation, but there are other operations equally as successful as Emmet's, and they have the advantage of being much simpler and more easily and quickly performed than Emmet's operation. One of these is Tait's operation. In all my operations the sphincters have healed; in every one of the complete ruptures there was complete retention. I do not see why a flap operation is not as well able to expose the ends of the muscles and make good results as any other operation.

DR. WILLIAM P. SEYMOUR read a paper on

THE NECESSITY OF RECOGNIZING THREE PLANES IN THE OBSTETRIC PELVIS.

Instead of the so-called "inferior strait," which is neither a mathematical plane nor has definite physiological or obstetric functions, Dr. Seymour substituted two planes: one the plane of the arch corresponding to the anatomical arch in the anterior wall of the pelvis and the true exit from the bony pelvis; and the second corresponding to the coccy-pubic diameter, the middle plane or plane of rotation, because it is in this plane that the phenomena of rotation are completed. The planes of rotation and the arch make with each other an angle of 50° , the same which Naegele established for the planes of the superior and inferior straits. The axes of these planes make, in meeting, an angle of 130° . It is at the plane of the arch that the greatest danger comes to the perineum, particularly when the arch is narrow and deep or broad and shallow. The recognition of these planes divides much more clearly and physiologically the periods of the second stage of labor, the curvature of the parturient canal, and gives clearer indications in instrumental procedures and the support of the perineum.

DR. DAVID BARROW, of Lexington, Ky., read a paper on

HOW THE REFINEMENTS OF ABDOMINAL SURGERY HAVE INFLUENCED GENERAL SURGERY.

The most valuable lesson taught the general surgeon is cleanliness; every preparation and all manipulations must be conscientiously clean. Unless the surgeon himself be clean, unless the proper care of instruments and sponges be taken, no surgeon, no matter how well he can cut and manipulate, will ever be successful in abdominal or any other surgery.

The leading abdominal surgeons have demonstrated conclusively that clean surgery can be done without the use of chemical agents.

That cleanliness is godliness is true in all surgical procedures; the man who wears a dirty shirt, who bathes but rarely, who lets his finger nails grow long and serve as filth receptacles, who allows the instruments to rust and the sponges to hold sand and septic matter, cannot be designated a surgeon; nor should he be allowed to practise surgery, for so surely as he touches a wound, just so surely will it be contaminated.

In Lexington, Ky., lived Dr. B. W. Dudley; he was the most successful lithotomist of his day, and had, before the teachings of aseptic and antiseptic surgery, performed 207 lithotomies with only six deaths. Dr. Dudley knew nothing of bacteria or of Listerism, but he was clean in person, and used clean water and soap unsparingly, and cleansed his instruments in boiling water.

Mr. Tait, the greatest abdominal surgeon, owes his success to his manipulative skill and faithful attention to details and cleanliness.

Abdominal surgery has created a surgery of details; it has pointed out and emphasized the utter impossibility of a dirty and careless man ever becoming a successful surgeon; it has demonstrated that clean surgery can be done without the use of chemical agents, and that it is best to exclude all septic matter from a wound rather than attempt its destruction in the wound. That the use of antiseptic solutions will do harm in general surgery I do not believe for a moment, provided such solutions are used simply as additional safeguards against septic infection, and not to the exclusion of other aseptic methods.

It has been my observation that the general surgeon will usually wash his hands carelessly in either a carbolic or bichloride solution; he will pay little or no attention to his finger nails; will dip his instruments in the antiseptic solution, and probably place them, after he has done so, in a poorly cleansed receptacle; the sponges will be fresh from the drug store and will contain quantities of sand; he will handle the patient, bed clothes, and probably different articles of furniture, after his hands have been cleansed for the operation; and, strange to say, he will feel, if he has succeeded in getting nice flaps, or has coaptated the cut surfaces in a pleasing manner to the eye, that he has done his duty, and will probably apply his anathemas against antiseptic surgery when septicemia and pus make their appearance.

After cleanliness, the next procedure in importance is probably drainage. Any fluid left in a recent wound is liable to undergo septic change, no matter whether it be serous or bloody, and no matter whether the fluid be in the abdominal cavity or confined between the flaps of an amputated leg.

The abdominal surgeon has certainly impressed upon us in a most convincing manner the importance of this refinement; and allowing for the anatomical and functional differences between the ab-

dominal cavity and the other regions of the body, the same rules and procedure will equally apply to drainage.

Acting the part of the "sentinel" is another valued function of the drainage tube, and that the information gained by it has enabled the surgeon to reopen a wound and stop hemorrhage that otherwise would have terminated fatally, we positively know. In general surgery we should always, when possible, drain with gravity; the more direct the outlet for the wound accumulation, the better result will we have a right to expect. Drainage through the abdominal incision, when properly done, is not against gravity, as usually implied, for the tube is merely an opening through which we can pass the long nozzle of a syringe to Douglas' pouch, and suck up the fluid as it gravitates there; and as fast as the fluid accumulates it must be drawn off, if necessary every half hour.

The drying effect of the drainage tube is important in general as well as in abdominal surgery.

Great irrigation with the minimum sponging must be mentioned as a refinement that the general surgeon would do well to pay more attention to. In a surgical procedure, prolonged anesthesia will cause shock, and is sometimes the cause of death in a patient who might have recovered had the operation been done more rapidly.

The peritoneal "toilet" must be thorough; the importance of washing out coagulated blood and debris, and having the cavity clean, cannot be overestimated. That the same care of toilet should be taken in the removal of a tumor or the amputation of a limb should be insisted upon. The abdominal surgeon must have confidence in his power to overcome complications and meet emergencies; and, above all, he must depend upon no one save himself, and be able to conduct the operation with but little assistance from others. Mr. Tait, in his abdominal operations, literally does everything himself, and the assistant is practically a figure-head.

The sponges will require the care of an assistant, either doctor or nurse, but, with this exception, it will be rare that an operation, either in the abdomen or elsewhere, cannot be completed by the operator alone; of course, an anesthetizer will be needed.

DR. JOSEPH HOFFMAN, of Philadelphia, Pa., read a paper on

THE ACCIDENTS AND COMPLICATIONS INCIDENT AND SUBSEQUENT TO ABDOMINAL OPERATIONS.

DR. McMURTRY, Danville, Ky. —The importance of the element of time referred to by Dr. Barrow demands a little more consideration. It is important to limit the time as much as can properly be done, in consequence of the danger from shock that comes from prolonging the anesthesia; but abdominal surgeons realize the importance of discriminating between rapid work and hasty work. All conversation about the operating table should be dispensed with. Incomplete operations are among the most distressing complications that can attend abdominal operation. The operation should always be completed, if possible. Abdominal surgeons are coming rapidly to main-

tain the views which have been maintained so constantly by Dr. Joseph Price, for a number of years, in regard to the necessity for drainage.

DR. A. VANDER VEER, Albany, N. Y.—Dr. Barrow's paper is one that emanates from a mind that has been dwelling upon abdominal surgery until he has perfected himself in all the technique beyond a doubt; but some of us who have been in the rough and tumble of fight of general surgery for a number of years before restricting ourselves to abdominal surgery will perhaps take somewhat opposite views of some of the points he presented. The late Dr. Peaslee, the neatest of all surgeons I ever saw operate, realized the importance of drainage more than many who have since followed him.

I believe that abdominal surgery has done a great deal of good for general surgery. I do not believe there is any portion of the practice of surgery where experience is of so much service as in doing abdominal surgery.

As to hernia, it is hard to account for it. No doubt our patients are allowed to get up too soon. A long incision tends to produce it.

DR. W. W. POTTER, Buffalo.—There has been probably as much confusion among the average readers of the literature of abdominal surgery in the past few years on the subject of knots as upon any other one point. I have been asked what is the Staffordshire knot, what about the Bantock knot, the Jones knot, or Smith knot. I was pleased to have Dr. Hoffman say it did not matter what kind of a knot you tied or what you named it, if you only tied it well. A good plain North American knot is good enough.

This little instrument here before me emphasizes to my mind a little more than was said in the paper on the subject of shock and the importance of heat to relieve it. I have only lately made one of the most trying sections I ever had to do with, and I believe if it had not been for the knowledge of what that irrigator will do, properly managed, the woman would have died. She was well-nigh in collapse before the abdomen was closed, after a very dirty operation in every way; more than a gallon of pus was drawn from a dermoid cyst, and the adhesions were something dreadful to attack, because of the time it took to release them. And that was the reason a woman fifty-three years of age probably did so badly on the table. But a continued flush of the hottest water that could possibly be borne, gallons of it, turned into that abdomen, served to rally her before she was removed from the table, and she has never had an unpleasant symptom since. A pitcher of water will answer, if one has not this irrigator. The hot irrigation has three functions: it shuts up the mouths of the vessels; it cleans up everything; and it rallies the patient from shock. Probably no one idea in all the modern abdominal surgical work has contributed to save as many lives as this of flushing the abdomen after operation.

DR. JOSEPH PRICE, Philadelphia.—I believe the Staffordshire knot has been responsible for some deaths by hemorrhage. I counsel that men not much experienced use the figure-of-eight instead.

I do not believe a general hospital is the place to do abdominal surgery. I scarcely believe it the place to do any surgery. I look upon it as a great big water-closet; forty, sixty, and a hundred stools a day to contaminate the atmosphere.

Hernias are due largely to few stitches imperfectly applied—stitches that cut and strangulate; stitches that provoke stitch

abscesses. I recommend a great number of well-applied stitches, not very tight, introduced with a small needle, not the big bayonet with a handle. While the latter needle was in popular use there were more cases of tetanus than at present. Now we are using a small needle, and we seldom hear of tetanus.

Adhesions in chronic inflammatory troubles are usually well organized and difficult to deal with. It is a matter of practice only to familiarize yourself just how to shell out pus tubes and abscesses of the ovary. These troubles are very common; hundreds of patients in every city are dying from pus to-day. It is surprising, the number of women dying in small towns and small cities from abscess.

About drainage. I would stop pelvic surgery if there was legislation to prevent my using it. There is no need to use a large tube; a small one will drain as freely as a large tube.

Anesthesia should be as short as possible. As little ether should be used as possible.

Irrigation should be very thorough. I have been in the habit of closing the abdomen full of water in bad pus cases. Simpson prefers the dry treatment, without irrigation, using sponges. I think it is impossible to make a clean cavity with sponges. I think it is high time we American surgeons ceased following Martin's methods. We cannot afford to risk the lives of our patients by following the methods of a man who has lost fourteen patients out of seventy-seven cases.

DR. TAYLOR.—About seventy years ago, MacDowell made the first ovariectomy. It is almost true to say that the operation for the time being died again. In the year 1843, in July, the operation referred to by Dr. Price was made by Atlee. Two months later, the first ovariectomy in the West after MacDowell's, forty-six years ago yesterday, was made by Dr. Alexander Dunlap, whom I have the pleasure to introduce to you.

DR. DUNLAP.—The last gentleman on the floor stated that Atlee and Dunlap were surgeons before they attempted this operation. Gentlemen, I do not claim to have been a surgeon at all. I only claim what I claim for every good and successful surgeon, that he has a gift from nature that he will never be able to learn.

I finished my first operation just as I do to-day. I pierced the pedicle and tied a double knot with silk. I always waxed the silk until I got it thoroughly imbued with wax. I sent a report of the case down to Harrison, and he sent it back to me and said he would not publish such an article, because it would encourage some other men to do a foolish operation; and I tore up the manuscript. Since then I have done nearly four hundred laparatomies; the last was day before yesterday. The woman was doing well when I came away this morning. My operations have been a little over eighty-three per cent of cures out of the whole number, and some were cases I would have preferred not to undertake. Some died from accidents that ought not to have happened. I never have used drainage to any extent at all, and I never put in any drainage tube. My mode of operating is to make a good long incision, open the cavity, and get down and see what you are doing. I use a good big needle, long enough so I can pass it down through the edge of the abdomen until I get it into the peritoneum, then through on the other side; and it takes a good long needle to do that. I am careful to bring the parts into coaptation. I put the stitches about an inch and a half apart,

and intervening I put the isinglass plaster. At the end of the third day, I always take those stitches out, and the union is perfect. I never had any cases of hernia or tetanus.

DR. HALL, of Cincinnati.—I am confident that in pelvic surgery, in that class of operations mentioned by Dr. Price this morning as filthy and dirty operations, we cannot have a low mortality without the use of the drainage tube. In all the operations where the adhesions are firm and extensive, and pus in the tube and tissues, I follow the practice so thoroughly advocated by a number of speakers this morning: put in the drainage tube in all doubtful cases, and, for the last two years, in all cases not doubtful. It is essential to have careful after-treatment, the first day or two particularly. I never feel perfectly safe until after the fourth night has passed.

DR. L. S. McMURTRY, of Danville, Ky., then read a paper on
INTRA-PELVIC INFLAMMATION: ITS PATHOLOGY AND TREATMENT.

The following points bearing upon the pathology of intra-pelvic inflammations are practically established: (1) Intra-pelvic inflammations cannot properly be classified as parametritis and perimetritis, inasmuch as inflammation of serous and cellular tissues cannot be separated clinically or histologically. (2) Peritoneal phlegmon of Nonat (pelvic cellulitis of Emmet) is as rare as inflammation of the cellular tissue in other parts of the body. (3) Intra-pelvic inflammation is, as a rule, *peritonitis*, resulting from disease of the ovaries and Fallopian tubes, arising in puerperal or gonorrheal infection, or the miscellaneous infections carried to the endometrium by unclean instruments, tents, or medicinal agents, or from traumatism. (4) Pelvic peritonitis is symptomatic, never idiopathic.

Intra-pelvic inflammations present every grade of severity from a mere inflammatory spot to general peritonitis and abscess. In the mild grade of inflammation, similar in nature and extent to light attacks of pleurisy, there is a mere inflammatory spot giving some discomfort for a time and passing away without treatment, leaving a bare trace of adhesions behind. A higher grade is illustrated by those cases wherein, with subserous congestion, transudation of serum and exudation of plastic material obtain, forming an accumulation in Douglas' pouch. Following M. Bernutz's illustration by analogy, this condition corresponds to pleurisy with effusion. In the highest grade of inflammation all the intra-pelvic structures participate; the inflammatory process passes through the stages already described, and goes on to suppuration, septic infection, and often to death. In the severe grades, the products of inflammation are deposited upon the serous surfaces covering the uterus, ovaries, and Fallopian tubes, leaving these organs imbedded and entangled in a mass of adhesions and bound down by bands of false membrane. As time goes on, these layers of exudate pass through the stages of congestion to that of organization into connective tissue, with progressive

contraction. The ovaries and Fallopian tubes, being the centre of infection, are the focus of inflammatory deposit. The ovaries, bound down and subjected to pressure, undergo inflammatory and degenerative changes. The fimbriated extremities of the tubes are destroyed and the entire tubes imprisoned in the exudate. The menstrual congestion with continued recurrence adds to the troubles by rendering tense these bands and strengthening and increasing the adhesions by constantly repeated congestion. The lesions entailed by pressure are increased by imprisoned secretions, and ovarian abscess and pyo-salpinx are common results.

In treatment, it must be remembered that pelvic peritonitis is symptomatic, the most common cause being the presence of some infection. Catarrhal inflammations of the endometrium, extending through the tubes, may imprison the secretions, which, undergoing decomposition, may beget peritonitis. Such are the cases resulting from exposure and cold during menstruation. To recount the various pathological conditions of the uterus, Fallopian tubes, and ovaries with which local or general pelvic inflammation is found, would exceed the limits of this paper. I address my remarks especially to the indications for operative interference. In consequence of the matting together of the pelvic organs by the exudate, differential diagnosis as to exact seat and extent of lesions is impossible. When rest, the hot vaginal douche, and frequent saline purgatives fail to secure resolution, and septic symptoms appear, we have to deal with pelvic abscess. The only treatment is to open the abdomen, evacuate pus, remove inflamed and degenerated structures, and establish drainage. When bands of false membrane have imprisoned the ovaries and tubes, destroying function and rendering the patient a miserable invalid, the abdomen should be opened, the organs released from adhesions and degenerated structures, and inflammatory products removed. The latter class of cases must be selected with careful discrimination.

DR. MONTGOMERY, of Philadelphia, in discussing

CRANIOTOMY UPON THE LIVING CHILD,

strongly advocated Cesarean section as an alternative.

The living child has an inherent right to life, which has been more or less recognized through all ages.

He said, in conclusion, that the history of the science demonstrates:

1. That craniotomy as an elective operation in the living child is unjustifiable.

2. That in cases in which the condition has been overlooked, and the woman comes to full term with a pelvis contracted sufficiently to preclude the delivery of a living child *per vias naturales*, the Cesarean operation should be performed.

3. That the improved Cesarean operation, barring exceptional cases, is preferable to the Porro.

4. It should be done, where possible, prior to the beginning of labor, and under aseptic precautions.

DR. A. VANDER VEER said: The discussion of the Cesarean section as an alternative of craniotomy is inseparable from the other surgical procedures designed for the delivery of a living child—the operations of Porro and Thomas. As an abdominal surgeon, one is bound to be conversant with each of these varieties of procedure and the special indications for the employment of each. Poorly equipped is he who has but one resource in the treatment of cases where supra-pelvic delivery is demanded.

Regarding difficulties of the technique of the operations, there is no great difference. The difficulties of one are counterbalanced by difficulties of the other. However, for the unequipped the Cesarean would doubtless prove the easiest to perform, but there are already so many good abdominal surgeons that they are accessible in all parts of the country. In any of the operations great manual dexterity is required. The range of the applicability of the Cesarean is of all the greatest, followed by that of the Porro, with laparo-elytrotomy with the least range of usefulness. The avowed purpose for which the operations of Porro and Thomas were instituted, *i. e.*, the lessening of the mortality of supra-pelvic delivery, has failed to meet the expectations of their advocates.

Probably laparo-elytrotomy will soon be replaced by either the Cesarean section of Sänger or the operation of Porro. I predict that another decade will have relieved Cesarean section of many of its terrors, that the mortality will not be greater than fifteen and may be less than ten per cent, and these results will be attributable to a livelier interest exhibited by the profession at large, to improvements in the technique of the operation, and withal to a more skilled class of operators. In the Cesarean section, I desire to be placed on record as being in favor of removal of the uterine appendages, thereby adding little to the risk of the recovery of the patient, and preventing the possibility of another pregnancy.

DR. WATHEN closed the discussion.¹

DR. E. E. MONTGOMERY read a paper on

VAGINAL HYSTERECTOMY.¹

THE DRY EXTRA-PERITONEAL TREATMENT OF THE STUMP IN HYSTERECTOMY.

By DR. JOSEPH PRICE, of Philadelphia.—The author advocates this treatment, and describes the method he now uses as follows: After the clamp is applied, the stump is cut off and trimmed down so far as seems compatible with safety. The stump is then drawn down into the lower angle of the incision, and its peritoneal covering above and below the wire stitched to the abdominal peritoneum, two or three stitches being all that is required. This shuts out all possible chance of sepsis.

A dry dressing of iodoform gauze is applied. Other antiseptic

¹ These papers will appear in full in a near number of this JOURNAL.

powdered substances, such as salicylic acid, or subnitrate of bismuth, may be used if desired. In case of large, succulent stumps, the bichloride may be directly applied. The result of this treatment is that the stump is completely mummified, and in a few days, varying according to the progressive tightening of the clamp, drops off without odor or discharge. The union of the incision is scarcely delayed. That absolute safety may be assured it is of the greatest importance that a reliable wire be used. The daily tightening of the clamp keeps up a constant strain on the metal, while at the same time it brings the wire into a greater curvature. The metal must be, therefore, pliable but strong, and not ductile, as copper. To fill these conditions, I find the "Delta metal" most suitable.

A CASE OF METREMPHYSEMA.

By THOMAS E. MCARDLE, A.M., M.D., Washington, D. C.—Mrs. T., 30 years old, was delivered of her first child, a girl, on the 28th of October, 1886. From this time until the 19th of May, 1888, she enjoyed fairly good health. On that date, her second child, another girl, was born. Six weeks later she began to suffer from a profuse leucorrhea, and to be greatly annoyed by the voluntary expulsion of gas from the vagina. Every day her embarrassment grew worse, and at night she was unable to turn in bed without being conscious of the audible report made by the escaping gas. Her condition became painful in the extreme, as she was shut off from all society other than that of her immediate household. Once or twice when she made the attempt to see her friends she was suddenly overwhelmed with confusion by a loud passage of air from the vagina. In July she placed herself under my care. An examination revealed a laceration of the perineum to about the centre of the triangle, one side of which is covered by the vagina—that is, to the second degree of Thomas. There was a moderate unilateral laceration of the cervix and subinvolution of both the neck and body of the uterus, together with a subacute cervical and corporeal endometritis. Both lacerations dated from the birth of the first child.

Rest, good nutritious diet, avoidance of everything calculated to disturb digestion, special attention paid to the procurement of a daily movement of the bowels, frequent hot-water douches, applications of nitrate of silver, Churchill's tincture of iodine, iodoform, depletion by glycerin, together with the internal and external application of electricity, formed the plan of treatment. At the end of two weeks she became very much better, and after six months of more or less persistent care she was able once again to go amongst her friends without being haunted by the idea that an unexpected and involuntary explosion of gas from her vagina would cause a blush of shame to mantle her cheeks. Of course, by such treatment the lacerations of the cervix and perineum

have not been repaired. More decided surgical measures will be necessary to accomplish such an end.

I have entitled my paper "A Case of Metremphysema." Metremphysema is derived from two Greek words, metra (*μήτρα*, the womb) and emphysema (*ἐμφυσάω*, I blow). Dunglison, however, makes metremphysema a synonym of physometra, and defines the latter as meaning "a light, tense, circumscribed protuberance in the hypogastrium, obscurely sonorous, with wind occasionally discharged through the os uteri with noise."

But there was, in the case just reported, no tumor ever discovered by me other than that due to the subinvolution of the uterus. It is true, however, that the explosion of gas never occurred while I was present, and, as the accident happened frequently, there was never much time given for a large amount of gas to accumulate, thus perceptibly distending the uterine walls. I am firmly convinced that the woman did not draw air into the vagina by the assumption of some special position, and subsequently discharge it with an explosive sound. Such a condition may occur when the triangle is divided through and the keystone is removed from its place in the arch. I have such a case under observation at the present time which I hope to cure by restoring the perineum. Thomas says that garrulitas vulvæ or flatus vaginalis occurs in about one of a hundred cases of destruction of the power of the perineal body. But the history of Mrs. T.'s case, and the cessation of the explosions after the involution of the uterus and the cure of the endometritis, justifies me in believing that the air came from the uterus, and was not merely drawn from the outside into the vagina. It is not my purpose to enter fully into a discussion of the subject of metremphysema. Dr. H. C. Yarrow's valuable paper on "Physometra" in the *AMERICAN JOURNAL OF OBSTETRICS*, August, 1883, seems to me fully conclusive that the condition exists more frequently than many authorities are willing to concede. Various theories have been offered in explanation of this phenomenon. The presence of some decomposed substance in the uterus, such as a fetus, a placenta, or retained menstrual fluid, would, of course, account for the accumulation of gas, especially if there were some impediment to its escape. But in the case I now report there was no such substance locked up in the uterus. I have already said there was a morbid condition of the mucous membrane; the utricular follicles were the seat of disorder, and their secretory function was greatly exaggerated. The decomposition of such secretions would account for the presence of gas in the uterine cavity. But, besides, there is no doubt that the blood-vessels of the matrix sometimes secrete within its cavity a peculiar gas. Dalton tells us that every organized tissue has the power of absorbing oxygen and exhaling carbonic acid: hence there is no reason to doubt that carbonic gas may be secreted by the lining membrane of the uterus. In accounting

for the presence and expulsion of gas in the case of Mrs. T., I would say that decomposition of the uterine secretions occurred very rapidly, and they were retained by the presence of a cervical plug of mucus. Whenever this plug was dislodged by any means whatsoever, the gas found vent and was discharged with expulsive force. The cure of the endometritis and the restoration of the endometrium to its normal condition resulted in the stoppage of the hypersecretion, and hence the formation of gas ceased.

THE ANIMAL SUTURE: ITS PLACE IN SURGERY.

By HENRY O. MARCY, A.M., M.D., LL.D., Boston.—Dr. Marcy's paper upon the uses and advantages of the animal suture is an exhaustive article, and contains much that is interesting and of great practical value. The history of the subject necessarily includes that of the ligature, with which term it is even yet often confounded, many authors, after using stitches, both interrupted and continuous, and closing them into the deeper parts of a wound, calling them ligatures.

Dr. Marcy reports his experience with the buried animal sutures applied to all variety of wounds. He recommends their use only by thorough disciplinarians of aseptic surgery under the rigid rule, "*an aseptic suture aseptically applied in an aseptic wound.*"

Dr. Marcy claims that a wound evenly approximated should be closed by buried animal sutures, taken from side to side lightly through the deeper layer of the skin, and covered by iodoform-collodion as a germ-proof dressing. Drainage in all non-infected operative wounds is not only unnecessary but detrimental, and should not be used.

Dr. Marcy clearly shows that he was the first, not only to use aseptically buried animal sutures, but that he published his experiences five years before Werth in Germany, to whom the credit in Europe has been generally given.

LIGATURES AND SUTURES—WHAT MATERIAL SHALL WE USE?

By DR. CLINTON CUSHING, of San Francisco.—The following list embraces all that the author is entitled to an opinion upon from personal observation: Catgut, silk-worm gut, silk, silver wire, elastic ligature.

For the past three years I have prepared with my own hands all the catgut that I have used; and a large experience with it has led me to believe that it is the best obtainable material in certain cases of plastic and abdominal surgery.

I use the three sizes of catgut strings used on the violin. I get the best quality, and put them in ether for forty-eight hours until they become perfectly white, as the ether removes from the catgut all the animal oil. They are then placed in a mixture of three parts alcohol and one part juniper oil, with the addition of three

drachms of hydronaphthol to each quart of the fluid. After ten days they are ready for use.

The largest size, or D string, I use for ligating the pedicle in ovariectomy and for repairing the perineum. The A string, or middle size, I use for repairing the cervix and for a buried suture in either the perineum or the abdominal wall. The E string, or smallest size, I use for ligating adhesions and bleeding vessels in the abdominal cavity.

The D and A strings do not become absorbed by the tissues in less than from seven to nine days, as can be easily demonstrated by observation.

For repairing the cervix I have found catgut more satisfactory than any other material, as it does not cut out of the tissues, and holds sufficiently long to secure union. The only disadvantage thus far noticed is that occasionally a small fistulous tract remains along one of the suture holes.

The cervix is closed by tying a strong double knot in one end of the suture, and by using a running or whip stitch the wound is closed very rapidly and easily.

The needle should have a large eye and a triangular point—qualities which are not found in the needles in the instrument shops.

For the perineum I use a large darning needle, which answers admirably.

The advantages of this heavy suture for the perineum are that it does not cut out, that it fills the track made by the needle, that it does not cause suppuration, that it remains sufficiently long to secure union, and that it does not require removal. These advantages are very manifest where both the cervix and the perineum are repaired at the same sitting.

Olshausen says: "The objections to catgut, that it slips easily, that it is impossible to pull it tightly, and that the knots will loosen, are not justified if the ligature is properly made." "In eleven autopsies in cases of ovariectomy in which the pedicle had been ligated with thick catgut, I found the ligature perfectly firm and unsoftened, although death had not occurred in six cases until the sixth to the thirteenth day."

J. Greig Smith, in his recent work on abdominal surgery, says: "As material for ligature there is no strong objection to catgut. I have used it and nothing else in more than twenty ovariectomies, and find it perfectly reliable."

I am convinced that surgeons who have failed with the use of catgut have used it of too small calibre, or have trusted to the specimens found in the shops—samples, perhaps, of unknown age.

Silk-worm gut has qualities that are possessed by no other material—that of being absolutely unirritating to the tissues in which it is imbedded, and non-absorbable, at least for a long time. I believe it to be the best material for closing the abdominal wall

after an abdominal section. No stitch-hole abscesses have occurred in any of my cases where this material has been used.

It is also an excellent material for perineal sutures. Instead of tying it and leaving the sharp ends to prick and annoy the patient, I slide over the two ends of the stitch a perforated shot in which has been tied a loop of strong black silk an inch in length. When the parts are approximated, the shot is run down to the perineal surface and clamped firmly, and then the ends of the stitch are cut off on a level with the surface of the shot. Now, when the sutures are to be removed, the loop of black silk enables you to draw the shot up so as to make it easy of access, in order that one side of the stitch may be clipped.

Silk thread, when aseptic and buried in tissues that are also aseptic, is one of the best materials that can be used; but in the skin or in the mucous canals, or in the peritoneal cavity when this cavity has been made septic by the presence of pus, the porous nature of the silk tends to produce injury to the tissues with which it is in contact, and in the case of the peritoneal cavity tends to keep up the existence of fistula or abscess until it is discharged.

In the case of pyo-salpinx, pelvic abscess, or suppurating hematocele, or in any case where it is necessary to leave a drainage tube in the peritoneal cavity after an abdominal section, heavy catgut, properly prepared, is the best material if we wish to avoid fistulæ; but in a simple case of ovariectomy where no drainage is required, the properly prepared silk thread is all that could be desired.

I have had made at the silk factory in San Francisco a kind of heavy silk, for the pedicle in ovariectomy cases, which seems to me to possess some advantages over any that I have seen. It is made of the best quality of Chinese silk, thoroughly washed and extremely soft. It is very loosely twisted, and when tied applies itself smoothly to the parts without cutting. The knot does not slip, as is the case with the harsh and tightly twisted silk found in the shops.

In injuries of the bowel, and in a resection of the bowel, fine sewing silk is probably the best and safest material.

I first boil the silk for half an hour with hydronaphthol and water, and afterwards place it in a strong solution of absolute alcohol and hydronaphthol, and it is then ready for use.

The silver wire I have not used of late years, except in cases of vesico-vaginal fistula; but I doubt not the silk-worm gut would be equally as good in these cases, and much more easily handled and introduced.

The elastic ligature, although used successfully by Olshausen for ligating the pedicle in ovariectomy, I have only used as a temporary ligature to the pedicle in abdominal hysterectomy for fibroid tumor; but I believe Schroeder's method of intra-abdo-

minal treatment of the stump will be the one adopted in the future.

SOME CONSIDERATIONS ON PERITONEAL EFFUSIONS AFTER INTRA-PERITONEAL OPERATIONS.

By DR. WILLIAM H. MYERS, Fort Wayne, Ind.—The author, after stating the diseases resulting from the presence of serum and the effusion of lymph, said that they are always met with in peritonitis, and are known as serous, sero-fibrinous, and purulent, these distinctions being based upon the character of the exudation. The rapid formation of lymph is referred to by citing the experiments made by S. D. Gross in 1840 on dogs, and also the adhesion experiments of Senn. The author says: "I am of the opinion that a much shorter period is required for perfect union to take place than is stated above. When the blood ceases to flow after an incised wound, exudation invariably follows, and the surface becomes glazed with plastic lymph."

The conditions are next alluded to that determine one or other variety of lymph, according to Paget, who assures us that he could usually guess from the examination of the fluid in a blister the tendencies of the inflammation: in the highest health unmixed fibrin, in the lowest health abundant corpuscles and a near approach to the character of the pus cells; the effusion depending upon the vital power. Rokitsansky is quoted that the products of inflammation exist preformed in the whole blood, and that the most marked differences of inflammation are manifested in its products. The idea that these differences are only one of degree is not sustained; that the doctrine of the late Professors Mutter and Gross, that the inflammation must not run too high or we have pus, is not believed, but that it will be more in accord with the scientific tendency of the present pathology to divide inflammation into simple and infectious, the latter being dependent upon the presence of specific microbes, they being the only essential cause of suppuration. It is now assumed that the growth and activity of micro-organisms depend upon the soil or media; that healthy living tissue possesses certain powers of resistance; that life is the great antiseptic. This view is supported by Lister, Cameron, and Billroth.

Recovery is often largely due to the high vital energy of the peritoneal surface in intra-peritoneal operations. A wound in the peritoneum heals with great rapidity in proportion as it is capable of resisting the development of putrefactive bacteria; in case of shock and depression of vital power the entrance of micro-organisms is permitted.

Hence the inference is, not to delay in intra-peritoneal operations for fear that the inflammation, if it ensues, will not be adhesive but suppurative, and that the doctrine held by some ovariectomists, to wait until the health is impaired, is not sanctioned by sound

pathology. This doctrine, to wait, has been held by Sir Spencer Wells, Peaslee, W. L. Atlee, Tyler Smith, and Errichs.

As the name of Thomas Keith has been placed in the list of those advising delay, I wrote a letter to him containing the following question: When would you operate in case of ovarian tumor, the diagnosis being clear? In reply I received the following letter:

42 CHARLES ST., BERKELEY SQUARE, W. }
July 9th, 1889. }

MY DEAR DOCTOR:—I have much pleasure in answering your letter of June 26th. I think that, as soon as you are sure of your diagnosis, the sooner an ovarian tumor is taken out the better. It can only be a source of danger. My early training in abdominal surgery—when at first operating we had only bad cases and large tumors to deal with—was rather for a time against early interference, because the risk of the operation was then great, or seemed to be great, in any case. I have long got over that, and now always advise early operation. . . .

Yours very sincerely,
THOMAS KEITH.

The presence of serum in the peritoneal cavity is next referred to, and its decomposition believed to be a most frequent cause of death. Peritonitis is much less frequent than stated in the books. After operation it is a question of sepsis whether the patient recovers or not. We have devoted too much attention to peritonitis and lost sight of the accumulation of serum and its rapid decomposition when effused into the peritoneal cavity.

To those who still believe, with Baker Brown, that "it's the peritonitis that beats us," to such I would address the exhortation of Oliver Cromwell when he lost patience with the Scotch Assembly and said: "I beseech you, brethren, by the mercies of God, conceive it possible that you may be mistaken."

SOME POINTS IN THE DIAGNOSIS OF PYO-SALPINX.

By DR. RUFUS B. HALL, Cincinnati.—This disease, said the author, entails much suffering upon the individual afflicted with it, and, by reason of the clinical interest and consequences, equals if not surpasses in importance any other affliction which the gynecologist is called upon to treat. He believes that the importance of the part played in the production of suffering in the victims afflicted with the disease has not received the attention from the profession at large that the subject justifies, especially when it is remembered that the general practitioner first sees and treats the great majority of these cases for a longer or a shorter time before they are seen by the operator. The subject of diagnosis, which is avowedly difficult to the specialist in his own department, is obviously more difficult to the general practitioner; and if we hope or expect to afford relief to a great number of suffering

women all over our land, the subject of diagnosis must be more fully understood by the profession at large than at the present. It is conceded by all members of the profession now that diseases of the Fallopian tubes are a prolific cause of serious functional disturbance, and that they not infrequently cause death, and that the removal of the diseased structures is justifiable in properly selected cases. But what we need most is to be able to make the selection, and decide when the palliative measures may be persevered in and when operative interference becomes necessary. The author believes that pyo-salpinx so often follows the other inflammatory diseases of the uterine appendages that he is compelled to refer to them frequently in discussing the subject, and says that salpingitis so often succeeds endometritis that the symptoms are merged with those of the primary disease, or are so completely masked by them that it is not suspected until pelvic peritonitis occurs. The importance played by septic infection in the production of inflammatory disease of the uterine appendages is the cause of these diseases in a very large percentage of cases, although it may be impossible to trace its origin in all of them. Owing to the unfavorable condition always present for the healing of the inflammatory process, acute exacerbations occur from trivial causes; the repeated attacks finally cause complete closure of the ends of the tubes. In consequence of the closure of the tube, the normal secretions of the tube soon become pathological, and, by the repeated attacks of inflammation, may, and not infrequently do, become changed into pus, producing the typical pyo-salpinx. While he is convinced that pyo-salpinx not infrequently follows puerperal diseases and gonorrheal infection, he does not believe that they are the only ailments which are likely to be followed by this complication or that they are the most frequent cause of the disease. He has operated upon a number of cases where no cause could be assigned or traced other than repeated attacks of inflammation following a cold contracted at the menstrual period. He believes that the disease may be contracted in two different ways: (a) by a chronic process causing droopy of the tube, which by repeated attacks of inflammation is changed to pus; (b) it may be rapidly produced by an acute process following gonorrhea and puerperal diseases. In no class of diseases is the history of such vast importance as the one under consideration—a history of almost constant suffering of some years' standing, directed especially to a certain locality, perhaps originating in an attack of pelvic or an abdominal inflammation, either connected or not with parturition. To this we may add sterility, and we have a history which will help us very much in forming a correct diagnosis. While physical signs are important, they are not more so than the history itself. By vaginal examination we can usually recognize diseased appendages. Yet this is not always possible. If we have a pyo-salpinx, we should be able to recog-

nize a diseased mass behind or upon one or both sides of the uterus, and in the large majority of cases exceedingly sensitive to pressure, which cannot be displaced or pushed upwards with the examining finger. In most cases it is difficult, and in many it is impossible, to make out the exact diseased condition of the appendages by physical examination, except in cases of pyo-salpinx. But we are usually able to say that disease does or does not exist, and, taking this with the history of the case, we will not have much difficulty in deciding whether or not the case is serious enough to justify us in recommending an operation. In pyo-salpinx, we usually have an irregular ovoid tumor showing swelling and constrictions not found in any other pelvic tumor except tubal collections. This tumor is usually of small size, and we have the sensation of indistinct fluctuation imparted to the finger on vaginal examination. The tumor may be in the retro-uterine space, extending towards the pelvic brim on the one side, with a second tumor on the other side higher up; and there may be distinctly felt a narrow furrow, which is caused by a portion of the uterine end of the tube remaining undistended by pus, while the distal end is enlarged to form the tumor. This furrow is not so plainly felt in those cases where there is a periodical discharge of the pus through the tube into the uterine cavity; this is a very valuable sign in making a diagnosis. In fact, if we have all the other symptoms of pyo-salpinx, with a history to confirm them, where we can feel the enlarged tube before a discharge of pus from the uterus, and immediately after the discharge has occurred we find that the tube has collapsed, then we have positive proof of the existence of pyo-salpinx.

The author believes that the diagnosis of pyo-salpinx is not so difficult as generally believed, if the *previous history* of the case is carefully inquired into and given due consideration and weight. The uterus is more or less fixed and misplaced. In most of the cases seen by him there has been a history of more or less pain during defecation, particularly marked in those cases where the tumor occupied the retro-uterine space. Most of the cases of pyo-salpinx coming under his observation gave a history of dyspareunia. If pain has been a prominent symptom, extending over a long period of time, and it is evident that the tube contains pus, the case must be looked upon as serious and demanding prompt relief. The same surgical law should govern us in the management of these cases as in every other surgical disease, "when pus is present let it out," and the way to let it out is to remove the offending tube. Delays under these circumstances are dangerous. The bursting of the tube containing pus may cause fatal peritonitis—an accident that he has seen follow in a number of these cases when a proposed operation had been refused.

PRESIDENT'S ADDRESS.

The President congratulated the Association on the success of the first meeting at Washington, and on the valuable publication made, and thanked the medical journalists for their kindly comments on the work of the Association.

The recent lecture of Sir T. Spencer Wells and the statistics of Munchmeyer show the propriety of uterine extirpation, and Wells' terse words, "The best means to prevent return is to operate early," must become an aphorism for our guidance, though the very essential factor, ability of early diagnosis, is still a desideratum.

The low death rate of myomata, and the great mortality from operation for their removal, suggest the propriety of rare resort to such operation. The brilliance of operative procedure obscures other work, and the apparently greater gravity of a case justifying an important operation diverts attention from suffering less severe; such minor ailments are, however, just as needful of care.

Schultze's and Hermann's recent publications regarding uterine displacements are likely to improve our management of such cases.

Subjects which seem to have been definitely settled are again revived and become the theme of active controversy, of which fact the discussion of the phenomena and conduct of the third stage of labor is an instance. We all know that debate on this topic has continued for several years in Germany, apparently with little benefit either to the combatants or to science; but the subject assumes much practical importance after the statement recently made by Duhrssen that "one woman dies every day in Prussia from post-partum hemorrhage."

Remembering that this fatality can occur only among a limited portion of our population, this would seem like a large mortality.

Assuming the period during which it could occur to be between fifteen and fifty years of age, we should have, according to our census reports, one death from hemorrhage after delivery in less than two hundred from all causes, among women in the period mentioned.

The great confidence we have had in the usual method of dealing with the placenta might lead us to the belief that we should be exempt from such disaster, but just now our idols are being shattered, and a man as eminent as Dr. Berry Hart has said: "I consider the Cr  d   the most dangerous plan possible for the separation of the placenta."

With these facts and these statements so much at variance with generally accepted opinions, certainly it is the part of wisdom carefully to survey the ground upon which our confidence is built.

The very satisfactory results of Cesarean section recently estab-

lish it as an operation which must be resorted to if the obstetrician would escape censure, and the success of the Porro modification must lead us carefully to seek to determine to which cases it is adapted and to which Säger is the more appropriate.

The recent advances in all departments of science and the wonderful practical application of newly acquired facts disarm incredulity, and we dare place no limit upon the possible acquisitions of the near future.

The Utopias of to-day may be the familiar dwelling places of to-morrow, and, actuated by the noble sentiment which so characterizes our profession, of seeking the truth for the truth's sake, we may be sure of grand additions to our knowledge and skill, and I can utter no better benediction than the hope that this Association may bear its full share in making these acquisitions.

At an executive session, the following officers were elected:

President, Dr. E. E. Montgomery, of Philadelphia.

Vice-Presidents, Drs. W. H. Myers, Ft. Wayne; R. L. Banta, Buffalo.

Secretary, Dr. William Warren Potter, Buffalo.

Treasurer, Dr. X. O. Werder, Pittsburgh.

Executive Council, Drs. A. Vander Veer, Albany; Clinton Cushing, San Francisco; C. A. L. Reed, Cincinnati; W. H. Wathen, Louisville; H. E. Hill, Saco, Me.

Philadelphia was selected as the next place of meeting.

The following Honorary Fellows and Fellows were elected to membership:

Honorary Fellows, Prof. F. Winckel, of Munich; Drs. B. S. Schultze, of Jena; Fr. Eklund, Stockholm; A. Charpentier, Paris; J. Halliday Groom, Edinburgh; A. H. Freeland Barbour, Edinburgh; Prof. Freund, Strassburg; Thomas Keith, London; G. Leopold, Dresden; Geo. Granville Bantock, London; M. Säger, Leipzig; Alexander Dunlap, Springfield, O.

Ordinary Fellows, William Wotkins Seymour, Troy; Joseph Hoffman, Philadelphia; William S. Gardner, Baltimore; Geo. H. Rohé, Baltimore; Geo. R. Dean, Spartansburg, S. C.; Wm. H. Wenning, Cincinnati, O.; David Barrow, Lexington, Ky.; Wm. J. Conklin, Dayton, O.; J. F. Y. Paine, Galveston, Tex.; Hamilton A. West, Galveston, Tex.; Rufus B. Hall, Cincinnati; J. H. Branham, Baltimore; Bernhard Burns, Allegheny City, Pa.; W. E. B. Davis, Birmingham, Ala.

ABSTRACTS.

1. Pichevin: Enucleation of Uterine Myoma by Abdominal Section (*Nouv. Arch. d'Obstét. et de Gynéc.*, April, 1889).—This is the ideal operation when the intramural tumors are too far from the uterine canal to use that method. Operation by Doléris. Patient 44 years of age. Menses regular; married at 18. Apparent normal recovery from first confinement, except pains in left pelvic region, which were irregular until within the last two years, when they became so excessive as to prevent walking. Cauterizations, pessaries, and tampons afforded no relief. Examination showed relaxation of the vaginal walls, a slight degree of cystocele and rectocele with prolapse of uterus, and by rectal touch a tumor the size of a walnut, situated on the posterior wall five centimetres from the posterior lip of the cervix, and a second tumor, higher up, attached to the left horn. The uterus was displaced to the left and posteriorly.

Anterior colporrhaphy was performed to restore the pelvic floor, but did not relieve the symptoms, so laparotomy was decided on. The usual incision was made, and the tumors disclosed and found attached as diagnosed. A transverse incision over the most prominent portion was made, the coverings dissected off with the finger nail and blunt scissors, while the uterus was elevated per vaginam. The pedicle of the tumor was severed by torsion and the wound closed by continuous catgut suture. No hemorrhage. The second tumor was situated in the right postero-lateral wall at the fundus. The same method was pursued as with the first, except that, owing to a slight hemorrhage, the suture was introduced before the complete ablation of the tumor. The external wound was closed in the usual manner by hair suture. No evil after-effects showed themselves, and complete recovery with alleviation of all symptoms was obtained.

J. E. K.

2. Klasson: False Polyps of the Uterus (*An. de Gynéc.*, February and March, 1889).—Besides the two classes of benignant non-recurring uterine tumors, commonly known as *fibrinous* and *mucous* polyps, there is a class of pathological formations giving the same symptoms, but of very different structure. They are the result of retained membranes or blood clots, especially after abortions, may remain latent for a long time, and are exceedingly difficult of diagnosis, being very variable in consistence, situation, and other uterine conditions.

Fibrinous polyps are formed from layers of coagulated blood superimposed on the obliterating thrombi of the uterine sinuses after delivery, which, not being absorbed, project into the uterine cavity by reason of the contraction of the uterine tissues. This deposit may also be made on a bit of retained membrane or of placenta. They may appear as vegetations (Slawiansky) or may fill the whole uterine cavity.

Placental polyps are the result of retained placenta, especially after abortion, due to the greater adherence of the placenta, the lessened uterine contraction, and the small size of the ovum, or to disease of the placenta or uterine membranes. Sometimes also they are favored by deformity of the uterus and by artificial delivery, though Credé's method of expulsion does not cause retention. In case of sufficient adherence, placental tufts may con-

time to grow to large size. Küstner advises curetting after abortion, in order to prevent this. Many cases of hemorrhage three or even more months after delivery are due to these growths, which do not irritate until subinvolution has reached a degree sufficient to cause drawing on their attachments and consequent opening of the sinuses. The distinction between mere placental retention and placental polyps seems to be one of time, absence of putrefaction, and abnormal adherence.

Growths arising from organization of retained membranes, especially after abortions, the retention being caused by endometritis or by reason of the greater adherence in the early months. Ten per cent are such cases, as described by Genesteix. The retained membranes are either discharged in the lochia, or are reabsorbed, or form the basis of new growths. Rarely is the whole decidua retained, the line of separation being generally between the true and reflected layers. Rarely also parts of the chorion remain attached to the decidua, the separation between the chorion and the amnion being due (Roemer) to the difference in elasticity of the two membranes. He also believes that the longer the bag of waters is retained, the greater is the amount of chorion left. Retention of membranes occurs in primiparæ nearly twice as often as in multiparæ (9% to 4.9%). The amnion is the membrane least frequently retained. A study of cases shows that all these varieties of polyps may occur, and that their symptoms may appear so late as to completely mask their origin.

J. E. N.

3. Bouvier: Results of Precocious Marriages (*Annales de Gynécologie*, March, 1889).—A study of 1,400 cases in the Beyrout Hospital. First group: 11 nulliparæ; 5 first menstruated at an average of two years after marriage. The 11 averaged twenty-nine years of age after fifteen years of marriage. Five cases of malposition were probably negative; 2 cases of parenchymatous metritis, 1 of dysmenorrhea, and 1 of metrorrhagia were directly traceable to the early marriage. In 1 case of endocervical polyp and 1 of uncertain diagnosis no connection was found.

Second group: those having term deliveries; 29 cases; in 8 of these menstruation came on ten months after marriage, averaged twenty-eight years of age after sixteen years' marriage; they had borne 31 children; 8 others, married under fifteen years of age, at the end of fourteen and a half years had borne 21 children; 13 others, married after puberty, had first menstruated one year and eight months after marriage, and at the end of thirteen and a half years of married life had borne 48 children.

Third group: both at term and abortion; 32 cases.

(a) In 9 cases menstruation came on one year and three months after marriage, and at the end of twenty-one years there had been 51 gestations, of which 21 resulted in abortion.

(b) In 7 cases, married at puberty, after twenty-one years there had been 44 gestations with 11 abortions.

(c) In 18 cases, married an average of one year after menstruation, at the end of eighteen years there had been 111 gestations with 33 abortions.

Fourth group: abortions only; 7 cases. These were married under fourteen years of age, and at the end of twelve years had had only 11 gestations, all ending in abortion.

In taking account solely of the time of beginning menstruation—

(a) 23 cases, married twenty months before menstruating, at the end of sixteen years had had 88 gestations, of which 26% were abortions.

(b) 16 cases, married at puberty, at the end of eighteen years had had 65 gestations with 18% of abortions.

(c) In 40 cases, married an average of eighteen months after menstruation, at the end of seventeen years there were 168 gestations with 25% of abortions.

In 78 of these cases inflammatory conditions were found 40 times, displacements 33 times, and other diseases 20 times.

Rouvier's conclusions are that by precocious marriage—

1. Fecundity is lessened.
2. The proportion of abortions is increased.
3. Inflammations, displacements, and deformities of the uterus are favored.

J. E. N.

4. Gilbert, Arwed: Birth at the Twenty-eighth or Twenty-ninth Week of Gestation, with Survival and Satisfactory Development of the Child (*Zeitsch. f. Geburts. u. Gynäk.*, XVI, 1).—The child, a girl now six years old, weighed at birth about 1,580 gm. It was wrapped in cotton wadding, bathed daily, and the temperature of the room kept at 16° to 18° R. It was nursed for the first seven days by a wet-nurse, then by the mother; the child did not thrive, but became daily weaker. Beginning with the seventeenth day, the mother's milk was given to the child from a spoon, it being evident that the little one was too weak to suckle itself. When eighteen weeks old, it was given cow's milk, and occasionally egg, bouillon, zwieback, etc. The child passed safely through the dangers of infancy, and at the age of four years, though delicate and incapable of much exertion, resembled in growth and appearance the average child of that age. Like most prematurely-born children, it suffered from rachitis, signs of which developed in the thirtieth week; it was later on treated orthopedically for scoliosis, with good results. It began to walk at two and a half years. The first teeth appeared at sixteen months.

L. R.

5. Chambrelent: Acute Meningitis an Indication for Premature Delivery (*An. de Gynéc.*, Feb., 1889).—Obstetricians are almost unanimous in counselling delay in cases of acute disease occurring during gestation, because (a) it generally leads to abortion spontaneously; (b) operative intervention might aggravate the disease; and (c) the fetus generally shares the maternal disease, and hence its life is compromised. These considerations do not seem to hold in cases of acute meningitis, whether tubercular or not. Of this somewhat rare complication, observation of three cases showed that gestation had not been disturbed, nor did the fetus show any signs of the maternal disease. In four other cases, live infants were obtained—one by spontaneous delivery before death, two by instrumental delivery *in extremis*, and one by post-mortem Cesarean operation.

An objection might be made that, as tuberculosis is transmissible, there would be no object in obtaining an infant likely to die in a few days. In answer: (1) It is very difficult to say before the autopsy that the meningitis is or is not tubercular. (2) Fatal transmission of the tubercular diathesis from mother to child does not appear to be sufficiently established. One observation showed that not only did the mother have tubercular meningitis, but also general tuberculosis, while the fetus showed no trace of a like lesion, and inoculations made from it gave negative results. (3) Even if the objection were true, the physician has no right to discount the future, his first duty being to save all possible.

1. Young woman, 18, admitted on diagnosis of vomiting of pregnancy at three months. Next day, delirium, cephalalgia, photophobia, and pupillary dilatation set in, which, with a slight remission, increased until death occurred on the twelfth day. There were no signs of uterine disturbance. The autopsy showed tubercles in none of the organs *except the brain*, while the fetus, its membranes, and liquor amnii were absolutely healthy.

2. Young woman, 20 years, in sixth month of gestation; admitted with intense cephalalgia and prostration, high fever and rapid pulse. Unmistakable signs of pulmonary tuberculosis. Death occurred on eleventh day. Autopsy showed tubercles in all the organs but the liver and the peritoneum. Examination, both gross and histological, failed to discover signs of disease in the fetus and its appendages. Two rabbits inoculated with lung tissue from the fetus and the mother respectively gave negative results for the first and positive for the second. These results are noticeable, since they demonstrate that the placenta is not an insuperable barrier to the transmission of noxious elements. Further, the meningitis has not led to abortion.

3. Young woman, in seventh month of pregnancy, with all symptoms of meningitis; died three days after admission, the fetal heart being heard up to time of death. No signs of abortion. Autopsy showed tubercle on the part of the mother; none in the fetus. Four other observations of women in later stages of gestation in which living infants were obtained confirm these facts. Hence Chambrelent advises that in all cases of intercurrent acute meningitis after the seventh month of pregnancy premature delivery should be brought on before the death of the mother, with the best chance of a living child.

J. E. N.

6. Menchmeyer, F.: On the Value of Subcutaneous Injections of Chloride of Sodium in the Treatment of Profound Anemia (*Arch. f. Gyn.*, XXXIV., 3).—After reviewing the history of transfusion and intravenous injection of saline fluids, with their evolution into the now more generally used subcutaneous injection, M. narrates eight cases in which the latter was employed. A .6% sterilized solution was employed. In addition to these eight successful cases the procedure was also resorted to in ten cases, in all of which death resulted. In the latter the anemia did not result from hemorrhage during or following labor, but was associated with great debility and collapse during laparotomy and operations of similar gravity; that is, the injections were practised upon individuals in whom the heart was the site of pathological changes accompanying disease, as, *f. i.*, the brown atrophy often seen with uterine growths. In such cases, the chief factor, the possibility of the injected fluid being absorbed into the circulation, is wanting. The author believed that he waited too long in the few cases of hemorrhage during or following labor in which the injections were not followed by success; he admits, however, that there are not yet sufficient data to state decidedly why in one case the procedure is followed by good results, and in the other fails; nor is it possible to prove conclusively that those cases treated successfully would not have done as well without the injections. It appears from these eight cases that the results were the best when the quantity injected amounted to from 50 gm. to 1,00 gm.; in most cases one injection sufficed; in two it was found necessary to repeat it. By this it is not intended to convey the impression that in each case of dangerous hemorrhage one injection of a given quantity should be given; on the contrary, the injection should be repeated until a good result is

apparent; in most of the author's cases favorable reaction occurred shortly after the injection; the reaction showed itself at the latest after three hours. Should no reaction occur by this time, the operation certainly should be repeated. The usual analeptics (camphor, ether, musk, etc.) should be resorted to before beginning the injection, as they aid in restoring impaired cardiac activity and facilitate the absorption of the saline fluid. The injections were generally made between the scapulae or in the neighborhood of the axilla, but the infraclavicular region is probably the best place. No inflammatory reaction occurred at the site of the injections. The apparatus for infusion (transfusion) consists of a glass funnel of moderate size, a rubber tube one metre in length, and a long needle. The latter is sterilized in an alcohol flame, and the whole apparatus disinfected with a five-per-cent carbolic solution. The first quantity of the saline solution which enters is allowed to run off, so as to flush the apparatus of the residue of carbolic solution; the site of the injection is also carefully disinfected; the entrance of air is prevented by keeping the funnel always full. It is advisable to further the distribution of the fluid by massage; should a large tumor form notwithstanding, a second and even a third place for injecting should be selected. The fluid should be of a temperature of about 37° C. The wound is covered by a pledget of cotton soaked in iodoform-collodium. L. R.

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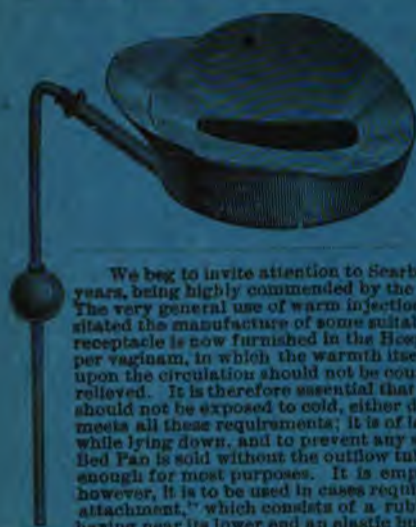
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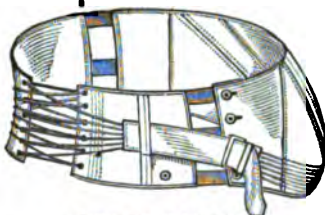
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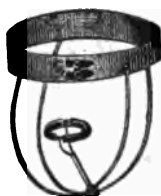
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VOL. XXII. NOVEMBER, 1889. No. 11.

ORIGINAL COMMUNICATIONS.

CONCEALED PREGNANCY: ITS RELATIONS TO ABDOMINAL
SURGERY.

BY

ALBERT VANDER VEER, M.D.,

Professor of Didactic, Abdominal, and Clinical Surgery in the Albany Medical College.

A HALF-CENTURY ago a distinguished German surgeon was called in consultation by a very competent obstetrician to a case in which the patient had apparently been in labor for three weeks. A Cesarean section was decided upon, and the abdomen opened, when, to the discomfiture of all, nothing but intestines distended with gas were found. That the professor was chagrined and in a vindictive frame of mind was demonstrated by the after-treatment, for he kept the abdomen packed with ice and applied two hundred leeches to the abdominal walls, and, in addition, subjected her to three bleedings. The patient recovered, and doubtless ever after desisted from trifling with the resources of surgery. This case has never been reported as a successful Cesarean section. From then until now errors relative to the diagnosis of pregnancy as a complication of abdominal section have occurred, and doubtless will continue to occur. No one has been free from the liability to this error. The most eminent and painstaking surgeon of extensive observation,

as well as the operator of few opportunities, have alike the same experience.

When mine came I must confess that I felt not a little humiliated. I asked myself, after a careful review of my notes and those of my assistant, Have I exercised all the care that is possible in the examination of my cases, and have my diagnoses been based upon good judgment? Text-books on obstetrics and gynecology furnished but little aid or comfort. The few cases reported were widely scattered, and many found in the tables accompanying this paper were secured only after diligent personal inquiry. Many of the moot questions of abdominal surgery have already been settled, and we are little benefited by papers devoted to the treatment of the pedicle, drainage, or the detailed histories of cases. I have thought that I might be able to contribute something for the benefit of the profession by giving the results of my investigations on this subject. I shall relate the histories of two personal cases of exploratory incision in which pregnancy as a complication of fibroid tumor occurred, and which was not diagnosticated prior to the operation, either by myself or my colleagues, after repeated careful examinations.

I purpose treating the subject with perfect frankness. I have collected all reported cases wherein the same conditions existed, and personal inquiry has secured the histories of many others which are now presented for the first time. That the tables are incomplete I know, for some operators have either perverted the histories of their cases or have suppressed them altogether. This latter statement is capable of abundant proof. We shall later, when we come to the consideration of the table of cases, collect such facts as seem warranted from the clinical histories, and endeavor to draw from them such conclusions as are justifiable.

CASE I.—*Abdominal Section, Exploratory. Operator, A. Vander Veer. Operation October 7th, 1887.*

Mrs. E. C. W., aged 34, native of U. S., married, and by occupation a housewife. Family history decidedly tubercular. Patient gave history of past ill health; but, aside from an expression indicative of much pain and suffering, she seemed physically strong. First menstruation at 13, scanty and painful; menstruation always irregular, and has suffered for extended periods from amenorrhea. No children, no miscarriages. Was treated during 1883 for ulceration of the cervix with leucorrhea. June 5th.

1887, was the date for the return of her menstruation, but no flow appeared, and June 25th, 1887, she noticed a tumor in left iliac region, which grew rapidly and became very painful. Patient had a slight show July 4th; also noticed slight tingling and swelling in the breasts; no nausea or vomiting. I gave her a careful examination at my office, and made the following notes: Breasts slightly enlarged and tender, areola not marked by pigments, abdomen to the height of the umbilicus irregularly distended. Palpation revealed a hard tumor on the left side and a softer one (semi-fluctuant) on the right side. No absolute signs of pregnancy after repeated examinations. Per vaginam a natural cervix could be felt high up, and a mass at the left of the uterus distinctly made out. I was in much doubt as to her condition, taking into full consideration the probability of a normal or extra-uterine gestation, also of fibroid or fibro-cystic tumor of the uterus. I advised that she enter the Albany Hospital for further observation, which she did a few days later. Upon examination and consultation by Drs. Boyd, Townsend, and myself, having agreed upon the physical signs already detailed, and having introduced a sound into the uterus three inches without result, in view of the distress and great pain of the patient an exploration was deemed advisable. A full explanation was made to the family, an operation advised and consented to by them, having in view the great probability of an ectopic gestation. Abdominal incision revealed two fibroids upon the left of the uterus, subperitoneal in character, and the remainder of the uterine tissue, especially upon the right side, seemed involved by multiple myxomata of a softer consistence. Adhesions were very general, precluding its removal. No further operation being advisable, abdomen was closed. Patient went on well until the fifth day, when localized peritonitis developed and rapidly became general. On evening of sixth day, abdominal wound opened in consequence of great distention of the bowels, due, in part, to peritonitis and obstructive pressure of fibroids. A large dressing was saturated with serous effusion. Wound was brought together by strapping. Next morning drainage was introduced, peritonitis subsided in a day or two, and case went on to recovery. Discharged from hospital November 8th, 1887, abdominal wound completely healed. November 13th I visited her at a friend's home, and found her presenting a very good condition of health and able to move about the house. Advised the use of electricity, and requested her to let me know later on how she progressed.

December 24th, Dr. H. F. C. Muller, of Rensselaerville, who had originally referred the patient, visited me and stated that he had been called to attend Mrs. W. a few days previous. Arriving at her house, he found her partially delivered of a six months' fetus. The doctor delivered the placenta, noticing quite an enlargement of the abdomen remaining. Patient recovered from her abortion slowly, and since I have had no opportunity for an examination.

CASE II.—*Abdominal Section, Exploratory. Operator, A. Vander Veer. Operation May 11th, 1888.*

Mrs. M. M. S., aged 35, native of U. S., and by occupation a housewife. Family history excellent, and before puberty enjoyed good health. First menstruation at 14, always regular, but suffered from dysmenorrhea and menorrhagia. The menstrual blood was always clotted. Married seven years. No children, no abortions. Three years previous had an attack of general peritonitis, from which she made a good recovery. Four years ago began to have a dull, dragging pain in the right iliac region and extending down the thigh. A very competent gynecologist was consulted, and he regarded the trouble due to the pressure of a displaced uterus. For the last eight weeks she had menstruated but one day at the time for her menstruation. About the middle of March, 1888, patient noticed a small, hard tumor in left iliac region, which gave rise to little discomfort. The tumor grew very rapidly after discovery, and was very painful, requiring the free use of anodynes to keep her comfortable. The breasts were tender, but the areola not markedly pigmented. The tenderness of breasts always occurred with menstruation. I saw her at her house in consultation with her family physician. Dr. J. R. Davidson, May 6th, 1888. Upon palpation, I found a growth in the left iliac, hypogastric, and extending upward in the umbilical regions and rather beyond the median line. It was very tender, nodular, and boggy to the touch. Upon percussion it was perfectly flat and did not fluctuate. Auscultation revealed no sign. Per vaginam the cervix could be made out far back towards the sacrum, but the body of the uterus could not be outlined. In the cul-de-sac of Douglas a body the size of an egg could be defined. Bimanually, cervix and growth moved as a single body. The uterine sound passed three and a half inches. Ballottement failed to elicit anything. The vagina was not distinctly tinged. The patient was examined by Drs. Boyd, Townsend, and myself a few days later. Although in consultation the intra-abdominal condition could not be agreed upon, from the urgency of the symptoms an exploration was deemed advisable—believing the growth to be a multiple uterine fibroma—with a view to hysterectomy or the removal of the uterine appendages. The abdomen was opened by the usual median incision, and upon examination of the growth it seemed sarcomatous in its nature, springing from the broad ligament and the body of the uterus. From the extent of the pelvic adhesions, and the great vascularity of the growth, and the bad prognosis of sarcoma, its removal was not undertaken. The fourth day after the operation, localized peritonitis occurred, but yielded kindly to salines and the ice coil locally. On the morning of the tenth day a slight show was noticed, and at noon the patient aborted, the fetus being about four months. There was no flooding. Her condition rapidly became more serious, and she died from exhaustion May 24th, 1888.

Autopsy three hours after death. Uterus implicated by large

fibro-myxoma, partially subserous in character; was studded with hard, nodular excrescences, thirteen in number, which completely surrounded the uterus. The great mass of the uterine tumor lay to the left of the uterus. There were extensive adhesions of tumor to the intestines and bladder. Cavity of uterus was four inches in depth and contained small portions of the placenta. There was no fluid in abdominal cavity, and but slight evidence of recent peritonitis. No further examination was made.

In addition to my personal cases, I shall take the liberty of presenting abstracts of the histories of cases which illustrate the conditions that are properly open for discussion.

CASE III.¹—*Abdominal Section, Exploratory. Operator, Cornelius Kollock. Operation May 21st, 1889.*

Abstract.—A. C. F., aged 28, colored, married, and has one child, now ten years old. General health apparently good. Four years ago she first noticed a fulness of the abdomen, more to the right than the left side. When I first saw her (May 10th) she was very much distended. The prominence was central and very high up. Tumor movable, hard, and nodular. Fluctuation could not be elicited; menstruation normal in every particular. She positively affirmed that she never missed a period save when pregnant the first time. There was no vaginal tinting; the os uteri was closed, and the cervix as hard as cartilage. The sound was introduced nearly four inches into the uterus, and she did not present a single symptom of pregnancy. The tumor had become so large that it produced severe dragging, dyspnea, and discomfort. An exploratory incision disclosed a very large sub-peritoneal fibroid springing from the fundus by a broad pedicle. The uterus was occupied by twenty-two other fibroids varying in size from an orange to a cherry. A supravaginal hysterectomy was done, and the uterine cavity contained a macerated fetus of two and a half or three months. The patient was doing well June 1st. A recovery.

CASE IV.—*Abdominal Section for Multiple Fibro-Myxoma. Operator, M. Péan. Operation December 15th, 1874.*

Abstract.—Madame B., aged 37, a widow for several years, always sterile. For several years had suffered from severe menorrhagia. Recently tumor had grown very rapidly and flooding had been very exhausting. M. Péan diagnosed fibro-myxomata and proceeded to their removal, which he did by enucleation. The operation was followed by abortion on the second day. Gestation had advanced between four and five months. Patient recovered.

CASE V.—*Abdominal Section for Fibro-Myxoma. Operator,*

¹ The abstract of this case is made up from notes kindly furnished by Dr. Kollock, who has frankly stated the facts in this and another case, and generously offered them for publication.

Professor Freund, Strassburg. Contributed by Dr. J. W. Poucher. Poughkeepsie, N. Y.

Abstract.—Patient aged 50, married many years, always sterile. Fibroid had existed for some time longer than discovered pregnancy. When the uterus was opened, to his own and everybody's surprise Freund brought out a buxom fetus, which also seemed very much surprised, for it immediately began to cry. It proved to be at least eight months old and all right. There was also a large fibroid which was very vascular. A supravaginal hysterectomy was done to complete the operation, and the result is unknown to me. This case is now reported for the first time.

CASE VI.—*Abdominal Section, Exploratory. Operator, Robert Barnes, M.D. Operation January 7th, 1877.*

Abstract.—Mrs. C.; had been married several years; no children or abortions. Always menstruated punctually until three months ago, without excess, since which menstruation has been suspended, and pelvic pain has arisen, with dysuria, retention, and intrapelvic pain accompanied by vomiting. A fortnight ago, swelling in the hypogastrium from pelvis upward became marked, and the abdomen was found partly filled by a tumor taken to be a fibroid. January 4th, 1877, Dr. Barnes saw the case and found an enlargement of abdomen extending to a little above umbilicus on the right side, and not quite so high on the left. It was tender and lumpy, and the os uteri was felt high up above the upper edge of the symphysis pubis, small and compressed transversely. Sound passed two and one-half inches. Behind tract of sound, and apparently behind tract of uterus, another dense tumor could be felt. By rectum the mass could be felt rounded, filling the sacral hollow. Two days later, Drs. Baber, Braxton Hicks, and Barnes met in consultation and discussed the probabilities of the case. Under ether, an attempt was made to dislodge the tumor from the pelvis, which was only partially successful. They thought the probability preponderated in favor of an ovarian tumor partially solid. It seemed impossible that fibroids could be developed so rapidly. The condition of pain, retention, vomiting, and commencement of strangulation of impacted mass, made it imperative to give quick relief. Gastrostomy was decided upon with this end in view. Abdominal section revealed general peritonitis. On summit and sides of tumor were numerous nodular projections. Trocar plunged in and a little blood and foul air were obtained. Tumor and uterus were removed by supravaginal amputation. Uterine cavity contained three months' fetus. Death from shock.

CASE VII.—*Abdominal Section for Fibro-Myxoma. Operator, Dr. Alex. Patterson. Operation December 11th, 1884.*

Abstract.—Mrs. M., aged 36, married nine years. Menstruation always regular until last few months. Now it was entirely suppressed. For years menstruation had been profuse. August, 1884, the patient accidentally discovered tumor in left side of

abdomen about the size of a small plum. In September, tumor began to increase rapidly and to be accompanied with great pain. September 22d, a specially qualified consultant was called; his diagnosis was hematocele in Douglas' pouch, and he advised against operative procedures. Matters becoming more serious, an eminent surgeon was called, who gave his opinion in very decided terms that the tumor was uterine fibroid and should be left alone, as an operative procedure would only hasten a fatal result. I was called December 21st, and thought the case to be one of fibroid that could be removed and the patient recover. In the left iliac fossa, close to pelvic brim, the tumor was most readily encountered. It was traceable across lower abdomen, getting lower to the brim on the right side. The growth was firm, elastic, nodular, and painless on pressure. Per vaginam, pelvis filled by small mass and the vagina was roofed across. Uterus completely fixed. Wishing to be sustained, I called a medical friend well versed in such matters, and after a prolonged examination he decided the case to be one of ovarian disease, probably double, and that it should be removed. An endeavor was made to introduce the uterine sound, but it could only be made to pass one and one-half inches. Abdominal section revealed multiple fibro-myxoma. A supravaginal hysterectomy was done, and uterine cavity contained a four months' fetus. Patient recovered without a bad symptom.

CASE VIII.—*Abdominal Section. Multiple Uterine Fibroid. Operator, Dr. Geo. Granville Bantock. Operation April, 1884.*

Abstract.—When patient first came under his notice two years prior to operation, the tumor was of small size, but menstruation was excessive. Whether as a result of medical treatment or otherwise, it was a singular fact that the menorrhagia diminished until the flow became quite moderate and even scanty, while the tumor kept on growing. For over three months before operation, menstruation had been absent.

As the patient was single, his suspicions were not aroused, and it was impossible to examine the uterine body, for the cervix was so drawn up that the os could only be touched with the tip of the finger, while the uterus was covered in front by one of the tumors. After separating omental adhesions to the larger of the two tumors, which had undergone cystiform degeneration, and turning out the whole mass, it was easy to secure a very good pedicle at the level of the internal os. He confessed he was rather glad he had not diagnosed the pregnancy, for had he done so he probably would not have performed the operation. He was happy to say that when last seen patient was in excellent health, and even contemplating marriage. Uterus contained a three months' fetus.

CASE IX.—*Abdominal Section. Supravaginal Amputation of Pregnant Uterus complicating a Multilocular Fibroid Tumor. Operator, Dr. James H. Etheridge.*

Abstract.—Mrs. A. B., aged 34, no children. First experienced

uterine symptoms four years ago. Two years later suffered from retroversion and impaction of the uterus, at which time a sub-peritoneal myoma was diagnosticated. In May, 1886, four years since first symptoms, patient suffered from distressing nausea. Mammary changes supervened. In the ensuing three months the tumor grew rapidly, and Dr. Knox diagnosticated pregnancy. At expiration of three months he decided to produce abortion. August 1st, 1886, sound was introduced into uterus four inches. Its withdrawal was followed by a small amount of blood, the nausea and vomiting ceased, and the mammary symptoms disappeared. Nothing further followed indicating the previous existence of pregnancy or abortion, and the conclusion was reached that conception had not occurred. The rapid encroachment on the abdominal organs, her diminishing strength, emaciation, and suffering, were progressively killing her. From external examination it was found that the tumor extended from right iliac fossa across the abdominal cavity in a straight line to the spleen. Its length was apparently double or treble its width. It was freely movable, free from adhesions, and solid. It presented great tenderness in right iliac fossa. Per vaginam the cervix uteri was found very high up in the left iliac fossa, and the fundus uteri was apparently thrust into the right iliac fossa. The whole tumor moved with the uterus. A very slight resiliency offered to conjoined manipulation led me to think that I had to do with a fibro-cystic tumor of the uterus. The sound entered the uterus four inches and seemed to pass toward umbilicus. The tumor was removed by supravaginal hysterectomy, and the patient died from septicemia. Examination of the tumor showed it to be fibro-myxomatous, and that the uterine cavity contained a three months' fetus lying in its unruptured membranes. Fetus was evidently alive at time of operation. The cervical canal was five and one-half inches long. Weight of tumor, ten pounds.

CASE X.—*Fibro-Myxoma of Uterus complicated by Pregnancy.*
Reported by J. Lucas Worship, Esq.

Abstract.—Mrs. C. C., aged 35, married two and one-half years. Family history good, previous health good. Six months after marriage she suffered from severe pain in the left iliac region, but continued her service. Later she began to enlarge and was examined repeatedly, but no signs of pregnancy ever elicited save amenorrhea. Never suffered from menstrual disorders. Tumor grew very rapidly and was irregular. Cervix was very high, firm, and near the sacrum. A diagnosis of malignant tumor of the uterus was made and palliative treatment instituted, but the patient died in two months. Post-mortem examination revealed multiple fibro-myxoma of the uterus and pregnancy. The period of gestation at death, six months.

INDICATIONS FOR OPERATION.

A study of the clinical histories, especially in the cases of fibro-myxoma, shows that there was an immediate demand for operative procedure. Robert Barnes so tersely states the indications for abdominal section in his case (see Case VI.) that the repetition is useful: "The condition of pain, retention, vomiting, and commencing strangulation of the impacted mass made it imperative to give quick relief." To these symptoms exploratory laparotomy reveals that other often fatal condition—peritonitis. Alex. Patterson's case was equally unpromising, but happier in its results. Pain has been a prominent symptom in nearly all of the cases, often requiring the continuous use of anodynes. Palpation gave so much distress that, if done at all, it was imperfect and unsatisfactory. The rapid growth of the tumor has led to dyspnea, dysuria, and constipation, or to more active obstruction of the bowel, edema of the extremities, vomiting, emaciation, and peritonitis. Universal experience has shown that temporizing with cases wherein there are symptoms such as have been related has been uniformly disastrous. The case of J. Lucas Worship, Esq., has been introduced in this article for the purpose of illustrating this point. Teachers have been often too prone to advise waiting for extended observation. It seems to me that Mr. Lawson Tait has carefully and clearly enunciated that which is the best practice, in one of his numerous controversial papers (*AMERICAN JOURNAL OF OBSTETRICS*, vol. xxi., p. 295), in which he says: "When the conditions within the abdomen are such that the life of the patient is evidently threatened, or the conditions continue in such a direction as to defy ordinary treatment and make life unendurable, do not let any doubt as to the accuracy of the diagnosis stand in the way of an exploratory incision, for this will at once make a complete diagnosis possible and open a road for successful treatment."

DIAGNOSIS.

The influence of gestation upon fibro-myxoma demands our consideration. The consistence of the tumor has been variously described as firm, doughy, soft, fluctuant—indeed, the sense of fluctuation has led the surgeon more than once to puncture the tumor with the aspirator needle or trocar. There can be no reasonable doubt that the different degrees of density are de-

pendent upon three conditions, viz., the structure of the tumor, its situation, and certain degenerative changes. The growths made up largely of muscular elements are more readily affected by the increased intrapelvic circulation of pregnancy, become more edematous and grow more rapidly, than those in which fibrous elements preponderate. Intramural fibro-myxomata, from their more intimate connection with the uterine walls, exhibit more active metamorphoses than do subperitoneal ones with slender pedicles. Pregnancy may also bring about necrotic degeneration and softening from pressure. If the foregoing facts are sufficiently established, then sudden enlargement and softening of pre-existing fibro-myxoma is a valuable sign of pregnancy. But this rapid increase in volume has not been uniformly observed (Gusserow, "Cycl. O. G.," vol. ix., p. 300). Again, as this rapid growth is most frequently dependent upon increased vascularity, causes other than pregnancy may operate similarly. Tumors largely myxomatous often markedly enlarge during menstruation and grow with great rapidity. On the other hand, fibro-myxomata in which sarcomatous degeneration takes place, or primary sarcomata of the giant or small round-cell type, are very rapid in their development, and are attended with great pain. In the case of Worship (l. c.), the diagnosis of malignant disease of the uterus was made. A priori, sudden increase and softening in a fibro-myxoma, to be of value as a presumptive sign of pregnancy, is dependent upon the exclusion of primary sarcoma or sarcomatous degeneration, and the soft and rapid-growing variety of fibro-myxoma.

For these reasons, in those cases where the diagnosis of pregnancy has been made upon the observance of rapid increase in size and softening in the fibro-myxoma, it is to my mind, although quite enough to arouse suspicion, based upon insufficient evidence. However, in connection with amenorrhea and mammary changes it is of great value, and yet has not been referred to with uniformity by writers. Ectopic gestation may occur in these cases, giving rise to the same changes in the tumor (see cases of Smutz and Bayle).

Amenorrhea is a valuable symptom when it occurs. It will be noted that it occurred in eleven of the twenty-six cases the study of which forms the greater portion of this paper. Yet there are circumstances which may materially modify its value as a symptom. For example, in my first case the patient gave a his-

tory of having suffered for extended periods from amenorrhea. Again, in the case reported by Bantock the menstrual flow had been growing more scanty for a long period, and finally ceased. The menstruation may continue, or an irregular flow may exist during pregnancy (Mundé, Bayle, Gusserow, and others). Abortion in cases of fibro-myxoma is most frequently induced by flooding. The sympathetic mammary disturbances which are observed in pregnancy were noted in four of the cases, but they are of themselves of no great value. In my second case they were present, but not more prominent than at any menstrual period. "The gastric, mammary, and nervous symptoms of pregnancy sometimes result from ovarian disease" (Thomas). Abdominal palpation, especially in the earlier months, can add but little in the elucidation of the problem, and often has misled surgeons of great ability. Auscultation may reveal a bruit, but who will say that it is the bruit of fibroid or of pregnancy? Later both palpation and auscultation are invaluable, revealing ballottement, quickening, and the fetal heart sounds. The sign of pregnancy to which in later years Braxton Hicks has called particular attention, the alternating contraction and relaxation of the uterus, may be entirely obscured by the fibro-myxoma. English operators have laid great stress upon this sign.

Per Vaginam.—The vaginal venous injection observed in pregnancy does not differ materially from that occurring with the large fibro-myxoma in which a concealed pregnancy may occur. In none of the cases here reported were there such changes in the cervix uteri as are regarded characteristic of pregnancy. The cervix has been described as firm, compressed transversely, elongated, and has been located high up behind the symphysis pubis, or back in the hollow of the sacrum, or operators have been unable to palpate it at all. Because of these distortions, Hegar's sign of early pregnancy has been of no assistance. The use of the uterine sound in both of my cases, and in nearly all of the cases detailed in Table I., has not aided in the diagnosis. So complete has been its failure that any facts determined by it should not enter into one's judgment of the case, and I am in great doubt if it should be used at all. Besides, the great difficulty of its introduction and the danger of perforating the uterine walls should be remembered. In sixteen cases, there were either no signs stated or an emphatic statement made that there were no signs of pregnancy present.

Granted that in a given case of fibro-myxoma the diagnosis of pregnancy is made, how does the operator know that the gestation is not ectopic, or that it is not located in a rudimentary horn of a bicornated uterus? Experience has shown that these errors have occurred, and, if diagnosis is to be exact, differentiation is demanded. But the possibility of the diagnosis of simple ectopic gestation before rupture of the tubal sac and hemorrhage is at least vigorously assailed not only abroad but in America. Manifestly this is no time for entering into the discussion of the merits of this last important question. I would not have it understood that, in my opinion, the diagnosis of early pregnancy as a complication of fibro-myxoma—*i.e.*, before the fourth month—is impossible in all cases, but that the diagnosis is, at the best, a matter of presumption, and that it is often impossible when immediate operative interference is demanded. With no desire to be critical, I must say that many of our textbooks give very meagre accounts of pregnancy as occurring with fibroids. Barnes, after writing at length, came to the conclusion "that the chief characteristic in the complication was the want of uniformity in the uterus." His statements regarding the diagnosis of pregnancy with ovarian cyst are equally as clear. Thomas makes no mention of the complication; and Byford, after referring to mistakes made by himself, Sims, Wells, and others, says: "A careful examination of the cervix uteri, the abdomen, and the breasts for evidences of pregnancy will seldom fail to make the diagnosis of this complication clear." Hart and Barbour, Emmet, Hewitt, Simpson, Scanzoni, Courty, and many obstetric authors either do not mention the complication or advise waiting. Prof. Skene relates the histories of two cases wherein pregnancy occurs with fibroid, and in which the diagnosis was not made until months later. Karl Schroeder expresses the opinion "that it may be exceedingly difficult to differentiate between simple fibroids and fibroids complicated by pregnancy." Hirst ("Am. Sys. Obst.") says: "In rapid-growing, soft myxoma, the diagnosis may be exceedingly difficult or impossible." Gusserow ("Cycl. O. G.," vol. ix.) rather neglects early pregnancy, but attributes the error in the later stages to carelessness. The editor of Spiegelberg's "Midwifery," 1887, makes a statement "that as a rule, however, there is very great difficulty, especially in the cases of intramural growth, since, at any rate during the first four or five

months, they often conceal the pregnancy. The most careful examination may not elucidate the case." After the fourth or fifth month, the error has occurred but three times. In Karström's case, ascites as a complication obscured the diagnosis. In the case of Prof. Freund, of Strassburg, the patient, fifty years old, always sterile, presented no symptoms that led even to a suspicion of pregnancy. It is only fair to Dr. Barnes to say that he suspected the possibility of pregnancy, but from the history of the case there seemed no ground for the suspicion, and it was not confirmed in consultation.

There is no error in diagnosis which brings the physician in so much undeserved disrepute in the popular mind as a failure to recognize the presence or absence of pregnancy. Yet I am familiar with several cases where either this error has led to abdominal section or all the preparations for one have been made. Recently a member of the British Gynecological Society amused a meeting exceedingly by relating a case wherein a specially qualified operator journeyed many miles to a case. After his arrival, late in the afternoon, he examined the case carefully, decided the growth to be fibroid and that it should be removed. Being much fatigued by his journey, he decided to remain and perform the operation the following morning. Early the next morning he was gravely informed that his services would not be required, as the patient had, during the night, given birth to a fine baby and the tumor had disappeared. Nor does this experience stand alone. Others have brought cases to the operating table with a dilating os uteri. Of the nine cases of simple pregnancy found in the table, five of them occurred early in the history of abdominal surgery, when methods of differential diagnosis were not as well taught and practised as now. I want to call attention particularly to the case of Dr. Wm. Varian. From the history of the case, I have no doubt that many, if not all, of us would have been led into the same disagreeable error. Dr. Prince has a similar experience. The frequency of the complication of undiagnosed pregnancy in single women will be noted in the tables. I am reminded of a remark attributed to the late Prof. MacNaughton, in answer to the inquiries of an anxious mother who had called him very late one night to see her daughter, who had just returned from a ball in a blissful state of intoxication. "Ah, madam, the best slip, the most cautious fall! Your daughter will be better in

the morning." It is well to have the quaint saying of the good old Scotchman always in mind when single women present themselves with abdominal tumors, and we should never be in a hurry to operate. The history obtained from the patient, and often from her relatives as well, will be full of deceit at best, and may be, as in Prince's case, made to fit minutely a variety of actual disease.

Such cases should be subjected to the most painstaking physical examination, nor should any protestations upon the part of the patient deter the surgeon from making a complete examination of the vagina and breasts as well as of the abdomen. His judgment must be based upon the physical examination entirely.

Pregnancy as a complication of ovarian cyst is met with considerable frequency, and is not always diagnosticated before operation. We can hardly enter into the discussion of the symptoms, for in twenty-eight cases that go to make up the table none are stated save in one case, amenorrhea. In some of the cases, the operators state there were absolutely no signs of pregnancy. The period of gestation in twenty-one cases was before the fourth month. Three others occurred in single women, and in two gestation was about the fifth month. The presumptive signs of pregnancy occurring with fibromyoma are, in cases of ovarian cyst, obscured or modified, yet to some of them greater diagnostic value can be attached. Close attention to menstrual disorders will occasionally determine the fact that the patient's menstruation has been perfectly normal until a recent period, when it ceased altogether. This is a sufficient ground for suspicion. The examination of the breasts should be a matter of routine, yet the evidence obtained will be of no great value. The vaginal examination here will be of greater value than with fibromyoma. If the uterus can be palpated and found regularly enlarged, yet independent of the tumor; if the cervix is softened and os patulous; if the vaginal walls are tinged—then there exist strong presumptive signs of pregnancy. Hegar's sign in such cases, if demonstrable, makes the diagnosis absolute. Palpation of the abdomen in the earlier months, when the error occurs, is of no value. When the uterus rises into the abdomen, then palpation and auscultation are, with ballottement and the sign of Braxton Hicks, sufficient, as a rule, to make the diagnosis. But the pregnant uterus may be obscured anteriorly by the large cyst;

it may be retroverted and impacted in the pelvis, or drawn up and dislocated laterally by the rapidly increasing cyst, so that it will be impossible to explore it satisfactorily; then the diagnosis is impossible. When the slightest suspicion of pregnancy exists in connection with ovarian cyst, the use of the sound is absolutely unjustifiable, although it seems, in the cases where it was used, that it only confirmed the error in diagnosis. Accumulated experience has shown conclusively that abdominal section for ovarian cyst in the pregnant woman should be done generally, and without the previous induction of abortion.

CONCLUSIONS.

I. Finally, from the study of the sixty-eight cases, I am convinced that the errors of diagnosis are dependent, in a large proportion of the cases, upon conditions which make it absolutely impossible, when these conditions recur in other cases, to avoid the same diagnostic conclusions.

II. That it is the duty of every operator, before making an abdominal incision, to secure, either himself or by a specially qualified assistant, a fully classified, written statement of the facts which go to make up the clinical history of the case, together with the results of the physical exploration made by the operator and his consultants, using a formal blank statement (that of Sir Spencer Wells, for example), so that no facts may be omitted; that no part of this duty should be delegated, except under supervision, to internes of hospitals.

III. That the probable diagnosis should be based upon the physical signs contained in the notes, corroborated, with few exceptions (unmarried and ignorant patients), by the rational signs contained in the clinical history, and not by simple abdominal palpation and "the dim light of a pelvic examination."

IV. That whenever the slightest probability of pregnancy exists, it should be fully explained to the patient and to her friends.

V. That the necessity for operative relief, and the consequence of delay or neglect, should be carefully stated to the parties interested before obtaining their formal consent to the operation.

VI. That it is the duty of every operator to report fully all such cases, that the methods of diagnosis may be improved if possible.

VII. That it is the duty of the profession at large to maintain that pregnancy may be absolutely concealed, especially prior to the fourth or fifth month, by other intra-abdominal conditions.

TABLE I.
ABDOMINAL SECTION COMPLICATED BY PREGNANCY NOT DIAGNOSTICATED BEFORE OPERATION.

Case.	Operator.	Reported.	Age.	Civil condi- tion.	Parity.	Condition diag- nosed be- fore operation.	Condition found at operation.	Period of gestation.	Result.	Symptoms if any, of pregnancy prior to opera- tion.	Remarks.
1	M. Péan....	Clin. Chirurg., Paré, 1876, vol. i., p. 679.	37	W.	0	Fibro-myxoma of uterus.	Fibro-myxoma of uterus and pregnancy.	4th mo.	R.	None stated...	Tumor rapid growth, very large. Patient a widow for nine years. Aborted second day. Enucleation. Porro's operation.
2	Prof. Freund	Personal letter Dr. J. W. Poucher, of Poughkeep- sie, N. Y., who saw ope- ration.	50	M.	0	Do.	Do.	8th mo.	R.	None.....	
3	Geo. Gran- ville Ban- tock.	Brit. Gyn. 34 Jour., vol. ii, p. 65; also pers'al letter.	34	S.	0	Do.	Do.	3d mo.	R.	Amenorrhea for three months.	Porro's operation.
4	J. H. Ethe- ridge.	Amer. Jour. 84 Obst., vol. xx., p. 69.	84	M.	0	Do.	Do.	3d mo.	D.	Amenorrhea, mammary changes.	Porro's operation.
5	Meredith....	Amer. Jour. ... Obst., vol. xix., p. 928.	...	..	..	Do.	Do.	2d mo.	D.	Amenorrhea for two mos.	Porro's operation.
6	Hofmeister ...	Die Myomoi- mae, p. 76, etc.	41	M.	0	Do.	Do.	3d mo.	R.	Pregnancy not absolutely excluded. Amenorrhoea.	Porro's operation.

7	Ditmer....	Contralb. für 40 Gynäk. ol., 1887, Bd. ii., p. 119.	M.	0	Fibro-myxoma of uterus.	Fibro-myxoma of uterus and pregnancy.	2d mo.	R.	Amenorrhea...	Porro's operation. Fe- tus dead and macerat- ed.
8	Karström....	Hygeia for 86 April, 1887.	M.	1	Exploratory ...	Do.	5th mo.	..	None	Porro's operation.
9	Kaltenbach.	Contralb. für 88 Gynäk. ol., 1887, Bd. ii., p. 485.	M.	1	Fibro-myxoma of uterus.	Do.	2d mo.	R.	Do.	Porro's operation. Dis- integration of tumor begun; fetus macerat- ed.
10	Alex. Pater- son.	Glas. Med. J., 86 April, 1885.	M.	0	Do.	Do.	4th mo.	R.	Do.	Porro's operation.
11	R. Barnes....	St. Geo's Hos- pital Report, 1874-76, vol. viii., 91-95.	M.	0	Exploratory ..	Do.	3d mo.	D.	Amenorrhea.	Porro's operation.
12	Wesseige....	Bull. de l'Acad. Roya. de Bel- gique, 11, Ser. 3, No. 4.	M.	1 (ab.)	Fibro-myxoma of uterus.	Do.	....	D.	Do.	Porro's operation. Called attention to absence of signs of pregnancy.
13	A. C. Ber- nays.	Reprint. Clin. Rep. of Sur- gical Cases.	S.	0	Fibro-myxoma of uterus. Possibility of pregnancy (?)	Do.	Viable.	D.	No symptoms stated in re- port.	Porro's operation.
14	J. Lucas Worship.	London. Obst. Trans., vol. xiv., p. 305.	M.	0	Malignant tu- mor of uterus	Do.	4th mo.	D.	None	Patient died in two mos. without operation.
15	J. Henry....	Gynecol. Jour., 1871, vol. ix., p. 831.	..	0	Fibro-myxoma of uterus.	Do.	4th mo.	D.	None	Patient died two hours after operation.
16	Prof. Wyeth.	Personal letter.	..	..	Do.	Do.	2d mo.	D.	None	Died from intraperito- neal hemorrhage.
17	Bayle	Annales de Soc. de Méd. St. Etienne.	..	..	Do.	Do.	...	D.	None	Patient flooded very se- verely.

Case.	Operator.	Reported.	Age.	Civil condi- tion.	Parity.	Condition diag- nosed before operation.	Condition found at operation.	Period of gestation.	Result.	Symptoms, if any, of pregnancy prior to opera- tion.	Remarks.
18	H. Tuholski.	St. Louis Poly- clinic.	36	M.	0	Fibro-myoxoma of uterus.	Fibro-myoxoma of uterus and pregnancy.	8d mo.	R.	Amenorrhoea three months before.	Fetus dead and macerated. Patient suffered from septicemia.
19	W. Walter.	Brit. Med. J., 29 1883, vol. ii, p. 718, 1883.	29	M.	0	Fibro-myoxoma (?). Exploratory.	Fibro-myoxoma and pregnancy. Do.	4th mo.	D.	Amenorrhoea. Slight men- strual changes.	
20	Vander Veer	Trans. N. Y. State Med. Society, '88.	34	M.	0	Exploratory; probably fibroid, extra- uterine pregnancy.	Do.	4th mo.	R.	Do.	Exploratory incision closed. Aborted two months later and re- covered.
21	Vander Veer	Not reported	35	M.	0	Fibro-myoxoma of uterus, probably ex- ploratory.	Do.	4th mo.	D.	None	Patient aborted tenth day after operation, and died.
22	C. Smutz	Brit. Gyn. J., 42 vol. iii., p. 691.	42	M.	0	Fibro-myoxoma of uterus.	Fibro-myoxoma of uterus and extra-uterine pregnancy. Do.	....	D.	Amenorrhoea & slight men- strual changes.	Porro's operation. Death from shock.
23	Thos. Keith.	Reported in discus- sion by Skene, Keith, Obstet. Tra. Edinburgh, 1884-86.	...	..	..	Do.	Do.	....	D.	None	By after-history learned fetus had been dead nearly four years.
24	Stoltz	Courty. Dis- cases of Wo- men.	...	..	..	Do.	Do.	..	D.	None stated	...

TABLE II.

PREGNANCY UNCOMPLICATED BY NEW GROWTHS.

25 H. A. Kelly.	Personal communication.	..	..	Exploratory ..	Large elongated ovary 24 in. long, $\frac{1}{2}$ in. in width, and pregnancy.	24 mo.	R.	None	Safely delivered at term, by forceps, of living child.
26 C. Kollock ..	Do.	28	M.	1 Do.	Fibro-myoma and pregnancy.	8d mo.	R.	None, absolutely.	Found macerated fetus, etc.
27 Ogden	Canadian Practitioner, Apr., 1885. Letter Dr. A. H. Wright.	24	M.	0 Fibro-myoma. Pregnancy suspected.	Do.	....	R.	None stated.	Abortion twelve days after operation. Tumor enucleated.

1 Olshausen...	Personal com. Dr. F. C. Bressler.	..	..	Ovarian cyst...	Pregnancy and hydatid.	...	R.	None stated...	Mistake discovered after abdominal incision.
2 Wm. Varian.	Phil. Med. and Surg. Rept., 1886, vol. ix., 457.	33	S.	0 Do.	Do.	8th mo.	R.	None.	Patient willfully deceived operator. Successful Cesarean section.
3 O. Prince...	Personal communication.	..	..	Fibro-myoma	Pregnancy....	....	R.	Patient deceived operator by giving history of profuse menstruation and gradual increase for long period.	
4 Jas. Overton.	Nashville Med. Jour., July, 1866.	..	..	Ovarian cyst..	Do.	8th mo.	R.	None stated...	An amusing account given in Nashville Journal.

Case.	Operator.	Reported.	Age.	Civil condi- tion.	Parity.	Condition diag- nosed before operation.	Condition found at operation.	Period of Gestation.	Result.	Symptoms, if any, of pregnancy prior to opera- tion.	Remarks.
5	Warren	British Med. Jour., vol. ii., 1881.	32	Dis- solved	0	Extra - uterine pregnancy.	Pregnancy ....	....	D.	M a m a r y changes, nau- sea, vomiting, expulsion of decidua membrane.	Porro's operation. Cor- oner investigated case and operator exone- rated.
6	Josh. Brad- ford.	Personal com. Dr. W. W. Dawson.	..	..	..	Ovarian cyst ..	Do.	...	D.	Operator misled by statements of pa- tient, husband, and physician.	
7	Henry Mil- ler.	Personal com. Dr. D. W. Yandall.	..	..	..	Do.	Do.	....	..	{ Both operators now dead, and cases unpublished, hence particulars are unknown.	
8	George W. Baylis.	Do.	..	..	..	Do.	Do.	....	..
9	E. E. Mont- gomery.	Personal com. from opera- tor.	..	..	..	Enlarged retro- verted ute- rus. Preg- nancy sus- pected.	Do.	24 mo.	R.	No symptoms, Safely delivered at term. but enlarged Well since. uterus.	
10	Prof. Czer- ny, Stras- burg.	Do.	..	..	..	Ovarian cyst ..	Pregnant ute- rus and hy- dranion.	....	R.	M a m a r y changes.	Safely delivered at term. Good recovery.
*11	Dr. Kelly, Norfolk, Neb.	Personal com. Dr. R. C. Moore.	..	..	..	Do.	Pregnancy ....	....	D.	None stated ...	

Cases marked * added to table since writing paper.

TABLE III.
ABDOMINAL SECTION COMPLICATED BY PREGNANCY NOT DIAGNOSTICATED BEFORE OPERATION.

Case.	Operator.	Where reported.	Condition diagnosed before operation.	Condition found at operation.	Period of gestation.	Result.	Symptoms, if any, of pregnancy.	Remarks.
1	T. Spencer Wells.	Abdominal Tumors, Philadelphia, 1885.	Ovarian cyst....	Ovarian cyst and pregnancy.	....	R.	None stated.....	Pregnant uterus punctured by trocar. Cesarean section.
2	Thos. Hillar.	Australian Med. Jour., February, 1875.	Do.	Do.	8th mo.	R.	None.....	Pregnant uterus punctured by trocar. Cesarean section. Patient a single woman.
3	Wm. H. Byford.	Byford, Dis. of Women, Med. ed., 4th ed., 753.	Do.	Do.	7½ mo.	R.	None stated.....	Do.
4	Erskine Manson.	Byford, Dis. of Women, Med. ed., 4th ed., 758, and Med. Record, N. Y., 1877, vol. xii., p. 749.	Do.	Do.	6th mo.	D.	Do.	Pregnant uterus punctured. Wound closed by suture. Abortion and death. Patient single.
5	Geo. Fortesque.	Australian Med. Gazette, 1884, vol. iii., p. 169.	Do.	Do.	....	D.	Do.	Trocar puncture of pregnant uterus. Porro's operation.
6	Esmarch, Kiel.	Fedellus, Mang. Diss., Kiel, '77. Personal letter.	Ovarian cyst. Multilocular.	Do.	2d mo.	R.	None.....	Delivered of a healthy male six months after operation.

Case.	Operator.	Where reported.	Condition diagnosed before operation.	Condition found at operation.	Period of gestation.	Result.	Symptoms, if any, of pregnancy.	Remarks.
7	Pollock.....	London Lancet, 1862, ii., 277.	Ovarian cyst....	Ovarian cyst and pregnancy.	2d mo.	R.	None stated . . .	The cyst was tapped four months before operation, and patient aborted at that time.
8	Bateman ...	London Lancet, 1869, ii., 410.	Do.	Do.	....	R.	Do.	
9	J. Marion Sims.	Trans. Am. Med. Gynecol. Soc., vol. v., p. 108.	Do.	Do.	4th mo.	R.	Do.	Patient went to term safely.
10	W. L. Atlee.	Do.	Do.	Do.	2d mo.	R.	Do.	Patient died two months later from vomiting of pregnancy.
11	Do.	Do.	Do.	Do.	....	R.	Do.	Patient went to term.
12	F. Bird.....	Do.	Do.	Do.	....	R.	There were absolutely no signs of pregnancy.	Patient aborted second day after operation.
13	G. Kimball.	Personal communication.	Do.	Do.	2d mo.	D.	Pregnancy suspected, but possibility denied by the patient.	Died from peritonitis.
14	Do.	Do.	Do.	Do.	8d mo.	D.	Pregnancy suspected by attending physician who explored uterus day before operation.	Do.
15	Dr. Dunlap..	Trans. Am. Med. Gynecol. Soc., vol. x., p. 111.	Do.	Do.	....	D.	Operator misled by statements of attending phys.	Patient aborted, rapidly sank, and died.

16 Theodore A. Heamey.	Personal communication.	Ovarian cyst....	Ovarian cyst and pregnancy.	2d mo.	D.	No symptoms....	Patient aborted and died.
17 J. C. Warren	Do.	Do.	Dermoid cyst of ovary and pregnancy.	4 mo.	R.	Do.	
18 A. Reeves Jackson.	Do.	Do.	Ovarian cyst and pregnancy.	2½ mo.	R.	Do.	Patient safely delivered at term.
19 Hunter Maguire.	Do.	Do.	Do.	3d mo.	R.	No symptoms noted or suspected.	Patient safely delivered at term.
20 S. D. Gross.	Personal communication from Dr. J. M. Barton.	Exploratory.....	Do.	3d mo.	R.	None.....	Patient aborted same night.
21 E. W. Cushing.	Annals of Gyn., Boston, 1888, vol. i., p. 335; also personal communication.	Do.	Parovarian cyst, 40 pounds, and pregnancy.	4th mo.	R.	Amenorrhoea.....	Patient safely delivered at term.
22 O. Prince....	Personal communication.	Parovarian cyst and pregnancy.	Do.	3d mo.	R.	Do.	Do.
23 C. Kollock.	Do.	Ovarian cyst large.	Small ovarian cyst and pregnancy (twins).	4th mo.	R.	None.....	Safely delivered of twins. Trio well four months later.
24 Geo. E. Jarvis.	Abstracts of records Hartford Gen'l Hospital.	Ovarian cyst (?).	Ovarian cyst and pregnancy.	5th mo.	D.	None stated.....	Patient aborted on third day and died.
25 H. A. Kelly.	Personal communication.	Exploratory.....	Large, elongated ovary 2½ in. long, 1 in. in width, and pregnancy.	2½ mo.	R.	None.....	Safely delivered at term, by forceps, of living child.
26 Dr. Cameron, St. John's Hos., Toronto, Can.	Personal communication Dr. A. H. Wright.	Hydro-salpinx...	Hydro-salpinx and pregnancy.	1½ mo.	R.	Do.	Safely delivered at term.

Case.	Operator.	Where reported	Condition diagnosed before operation.	Condition found at operation.	Period of gestation.	Result.	Symptoms, if any, of pregnancy.	Remarks.
27	Dr. Cameron, St. John's Hos., Toronto, Can.	Personal communication Dr. A. H. Wright.	Ovarian cyst . . .	Ovarian cyst and pregnancy.	3d mo.	R.	None	Has now nearly reached full term.
28	Dr. Winckel, Munich.	Personal communication from operator.	Ovarian cyst. Multilocular.	Do	5½ mo.	R.	Do.	Patient safely delivered 3½ months after operation. When uterus was exposed child moved vigorously.
*29	T. Spencer Wells.	Abdominal Tumors, Phila., 1885, pp. 118, 119, and 120.	Ovarian cyst . . .	Do.	Viable.	R.	None stated	This is Case 507 of first series. Labor soon after operation.
*30	Do.	Do.	Do.	Do.	3d mo.	R.	Do.	Case 1188 of second series.
*31	Mr. Burd, Shrewsb'y.	Do.	Do.	Do.	4th mo.	R.	Do.	Aborted second day after operation.
*32	J. E. Sommers, Nebraska.	Personal communication Dr. R. C. Moore.	Do.	Do.	1½ mo.	R.	Do.	Aborted after operation.
*38	Jos. Price	Personal communication from operator.	Do.	Do.	2d mo.	R.	None	Safely delivered at term.
*34	Do.	Do.	Exploratory	Strongly adherent left ovary and pregnancy.	8d mo.	R.	Do.	

Cases marked * added to table since paper was written.

TABLE IV.
PREGNANCY IN BICORNATED UTERI, ETC.

Case.	Operator.	Reported.	Age.	Civil condi- tion.	Parity.	Condition diag- nosed before operation.	Condition found at operation.	Period of gestation.	Result.	Symptoms, if any, of pregnancy prior to opera- tion.	Remarks.
1	A. McDona- ld.	Obst. Trans. Edinburgh, 1884-86, p. 76.	23	M.	0	Fibro-myxoma of uterus.	Pregnancy in bicornated uterus.	...	R.	Very ignorant patient. In- definite his- tory.	Hysterectomy. Uterus con- tained macerated fetus weighing five pounds.
2	Scifosow- ski.	Red. Gen. de- Clin., No. 13, 1889.	...	M.	1	Exploratory ...	Pregnancy in right corner of uterus.	7th mo.	R.	No definite symptoms. Patient flood- ed severely.	Fetus dead and macerated.
3	P. F. Mundé	N. Y. Obst. ... Society, May 7th, 1889. Personal let- ter.	...	M.	1	Fourth month tubal preg- nancy.	Pregnancy in right corner of bicornated uterus.	...	R.	Physical symp- toms. Sore all over right side of abdo- men.	Sound before operation al- ways entered three inches to the left. Incision in ab- domen closed. Abortion. Recovery. (Letters of May 11th, 1889.)
4	J. E. Janvrin	....	...	...	...	Extra - uterine pregnancy.	Do.	...	D.	....	Aborted and recovery.
5	H. O. Marcy	Personal letter.	...	...	...	Exploratory ...	Interstitial pregnancy thought probable.	3d mo.	R.	No symptoms.	

BIBLIOGRAPHY.—In addition, in tables, to references found in "Diseases of Women," Barnes, Simpson, Hart and Barbour, Hewitt, Jones, Courty, Scanzoni, Hegar and Kaltenbach, Péan, Hofmeier, Von Flammerdinghe, Tait, Wells, Thomas, Emmet, Skene, Byford, and Goodell.

Obstetrics: Barnes, Playfair, Simpson, Leishmann, Schroeder, Spiegelberg, Cazeaux, Tarnier, and Lusk.

Reports: London and Edinburgh Obstetrical, St. George's and Guy's Hospitals, Journal British Gynecological Society, AMERICAN JOURNAL OF OBSTETRICS, Annals Gynecology, etc.

NOTE.—For much that pertains to the preparation of this paper, collection of cases, etc., I am indebted to Dr. Willis Goss Macdonald, Assistant in Abdominal Surgery, Albany Medical College; and I wish also to extend my thanks to those gentlemen who were so kind as to send me the history of their own cases, hitherto unpublished, and other references.

TAIT'S FLAP OPERATION FOR LACERATED PERINEUM.

BY

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(With three woodcuts.)

PERHAPS upon no one operation in the whole range of gynecology is there so much lack of unity as upon that for the restoration of a lacerated perineum. In looking through our literature, I find, though an event of frequent occurrence, the profession have never yet definitely settled upon the merits of any one method of repair. Many articles, some of an extraordinary length, have been written upon this subject recently, each writer advancing a peculiar idea of his own, and in nearly every instance recommending a new operation or a modification of a previous one. The almost inexhaustible length and number of papers that have been written upon this subject have only enshrouded it in further confusion and elevated the operation into a mysterious position, to my mind wholly unjustifiable. The results of this have been unfortunate and confusing, and have left the general profession with the idea that there must certainly be something mysterious about the repair of this tear.

I have long since thought it would be well, as far as possible, to unite upon one or two methods, and have them properly taught and practically demonstrated in our colleges. I believe the splitting operation, as advocated and performed by Mr. Lawson Tait, to be much superior and preferable to the various old denuding procedures. For simplicity, rapidity, and surety of union it is much in advance of the complicated and uncertain methods of denudation. I believe, when thoroughly understood, it is destined to be *par excellence* the operation for complete and incomplete laceration as well as for prolapsus.

I was exceedingly pleased to see in a recent issue of the *AMERICAN JOURNAL OF OBSTETRICS* an article from Dr. Paul F. Mundé upon the merits of this operation. It was a relief to find that he had not followed the example of those who have been writing upon this subject of late, wherein they, almost without exception, begin by raking over again the anatomy of the perineum and theorize as to which muscle or set of muscles is to blame for the condition present; according to which, in the mind of the writer, is a new operation or a modification suggested and described.

No description of the flap-splitting method of Lawson Tait has yet appeared that can be accepted as accurate. That given by Dr. Paul F. Mundé, as well as that described by Säger and others, differs in many important details from the simple method of Tait. It is to be hoped the profession will leave this operation as it stands in its beautiful simplicity, and that the craze for "modifications" will not be allowed to confuse the mind of the profession, which it is sure to do by introducing complications.

Having had innumerable opportunities of witnessing Mr. Tait perform this operation in all degrees of lacerations, and having frequently performed it myself, as it is the one I always adopt, I can vouch for its being an easy and certain method for the repair of these conditions. I have never seen any complications arise, nor have I known of a failure. The time required is usually not more than from four to six minutes, and I have seen it done in the marvellously short time of a *minute and a half*. The short time required to complete it I consider a great advantage; for many women will consent to have it performed when told that not longer than from five to eight minutes will

be required to finish it, whereas for a long operation they frequently hesitate and postpone.

All the descriptions that have yet been given fail to give the proper course and extent of the incisions. They are usually erroneously represented by the letter H or the figure \sqcup , which would give, in the former case, a quadrilateral raw surface when the flaps were split. When the tear does not extend through the sphincter ani, the incision should always begin at the bottom of the old tear, at its centre. The scissors is guided outwards and upwards with a gentle curve along the boundary line between the skin and the mucous membrane of the labium to the

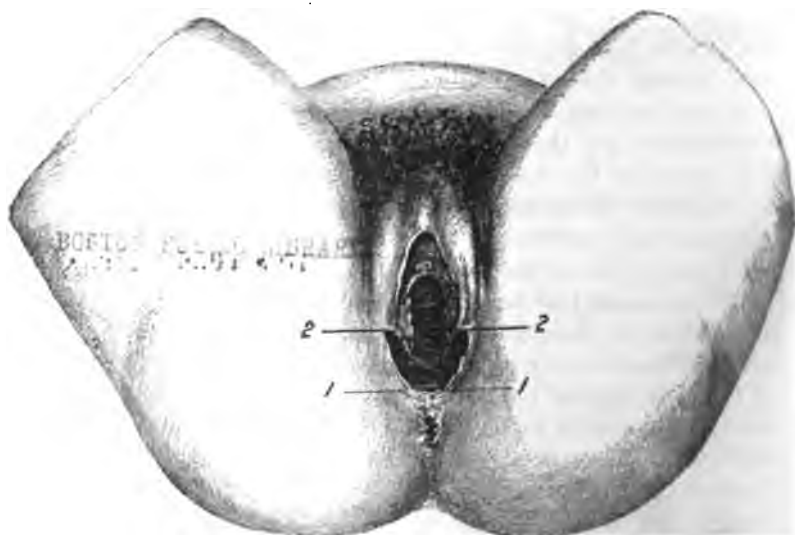


FIG. 1.—Flap-splitting for incomplete laceration.

extent of an inch, or an inch and a half, as required. The other side is similarly split, so that the figure it represents will not be that of the capital letter H on a large scale, nor the figure \sqcup , but rather the flap of both sides forming the elliptical figure \cup (see 1-2, 1-2, Fig. 1). When, however, the sphincter is implicated, two small additional slits will be required. They are made by cutting down to each side of the sphincter muscle, beginning at the curve of the original incision. They need not be longer than a third of an inch; thus \cup (i.e., 3-4, 3-4, Fig. 2).

For no operation with which I am acquainted does the patient

require less preparation. She should have taken no food for a few hours before, and it is well to give her an enema half an hour or an hour before the operation. It is not necessary to shave the labia, nor is an assistant required except to give the anesthetic. The instruments required, and the only ones that should be used, are a scissors bent on the flat, a handled perineum needle, two pressure forceps, four or five silkworm-gut sutures, one sponge, and a basin of clean water. I will now proceed to give the details of the operation minutely, and I may say that it has been reviewed by Mr. Tait himself, and is approved by him as the most exact that has yet appeared, and as

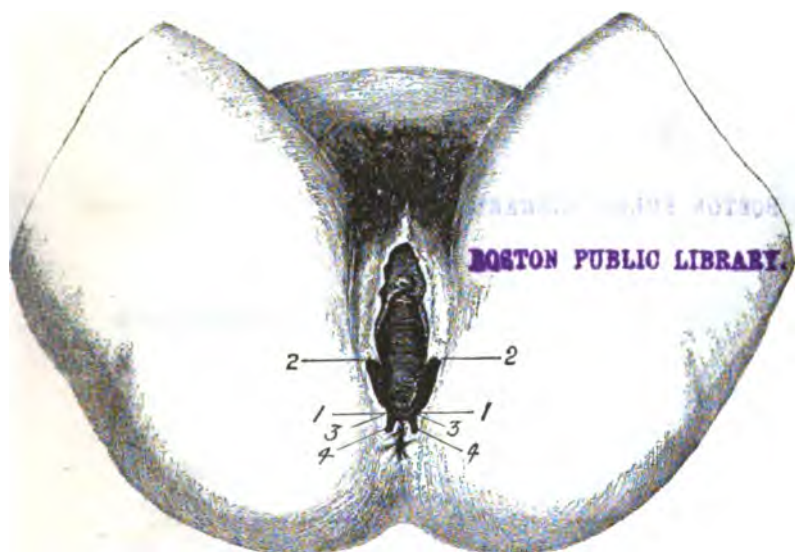


FIG. 2.—Flap-splitting for complete laceration.

the best illustration of his method short of an actual inspection of the proceedings.

The patient is put under the anesthetic and the operation performed in the bed. She is brought to its edge in the ordinary lithotomy position, her legs being well flexed and held apart by a Clover's crutch. The operation is begun by inserting the point of the scissors to the extent of a quarter to half an inch at the bottom of the old tear, which is usually represented by a white, hard, cicatricial band. He then cuts outwards and upwards along the boundary line between the vaginal mucous membrane and the skin of the labium of the left side to the extent of

an inch and a half or two inches, gently tapering in depth as he approaches the end of the incision (see 1 and 2, left side, Fig. 1). Beginning at the original starting point at the bottom, the opposite side is split up exactly the same length and depth (see 1 and 2, right side, Fig. 1), so that the two surfaces when brought into apposition will exactly fit each other. The split surface of one side is brought against that of the other by sutures, and the operation is complete. The suturing is done in the following manner: Begin near the top of the split on the left side by passing the point of the needle into the raw surface

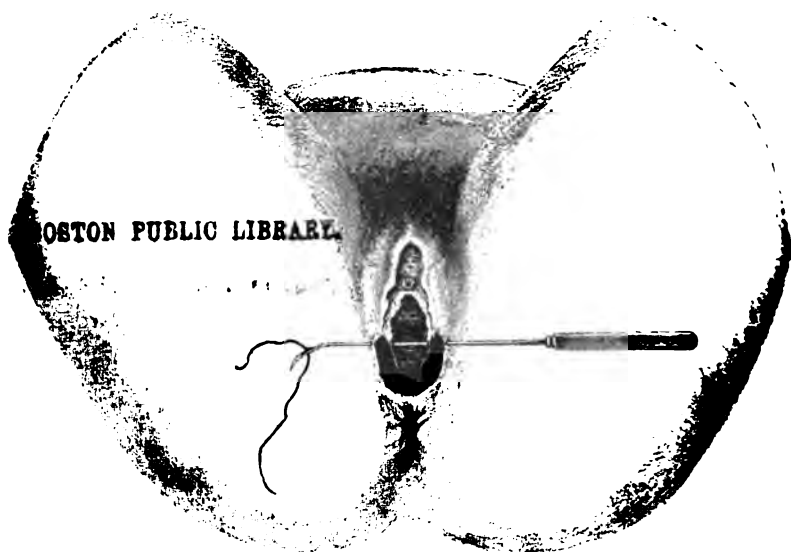


FIG. 3.—Introducing first suture in flap-splitting operation for lacerated perineum.

as close to the skin margin as possible. (The skin edge must not be included in the suture.) It is passed under and comes out in the raw surface close to the vaginal mucous membrane. The point of the needle is then passed on over to the split on the right side to a corresponding point. It is then entered again into the raw surface close to the vaginal mucous membrane, passed under the split, and comes out again in the raw surface close to the skin. It is then threaded with silkworm gut and the needle withdrawn, bringing back the suture. Three, four, or five similar sutures parallel with the first and about half an inch apart will be all that is necessary. They are introduced exactly as the first. When these are drawn tightly

together and tied, they will bring the split surfaces into close apposition, and make as good and, in many instances, a better perineum than before the rupture.

When the rupture is into the sphincter ani, an additional split down to each side of that muscle is made, beginning each one in the original incision about a quarter of an inch from the spot where the point of the scissors was first inserted (see 3-4, 3-4, Fig. 2). These incisions are from a quarter to half an inch in length. This forms the rectal flap. One or two sutures are introduced as the others, which brings the raw surfaces into apposition and makes a complete union of the sphincter.

This operation is becoming widely used also in prolapsus, the only difference being that it may be necessary to make the flaps a little longer and deeper. The sutures should not include the skin, as the flaps cannot then be brought so closely together; and, besides, the skin, by turning in, interferes with union. Silk-worm gut is much preferable to silver or silk for sutures. They may be left in for two or three weeks if required. No application to the wound is necessary. The after-treatment consists of light diet for a week or ten days.

I have not heard of the parts again rupturing at subsequent confinements, which speaks well for the method.¹

STEELE BLOCK.

A CASE OF TRIPLETS, HYDRAMNION, AND MONSTROSITY, WITH REMARKS CONCERNING THESE THREE ABNORMALITIES.²

BY
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(With two woodcuts.)

BEFORE detailing the case which suggested this paper, it may be of interest to say something concerning the three abnormalities embraced in it, viz., *triplets*, *hydramnion*, and *monstrosity*. Although the course of labor in cases of plural births is often normal, they are usually classed as abnormal. Playfair,³ in

¹ [The reader's attention is called to Mr. Tait's letter on this subject in the last (October) number of this JOURNAL.—P. F. M.]

² Read at the September meeting of the Rhode Island Medical Society, 1889.

³ "System of Midwifery," p. 180.

giving his reasons for this, follows Arthur Mitchell in saying: "Not only is there a direct increase of risk both to the mother and her offspring, but many abnormalities, such as idiocy, imbecility, and bodily deformity, occur with much greater frequency in twins than in single-born children." Twins occur about once in eighty labors; triplets once in seven thousand. The latter is, therefore, an occurrence sufficiently rare to make every case worth recording. Twins may originate in two ways:

First, by two separate ova which may be discharged from a single Graafian follicle, or each of them from separate follicles. If from separate follicles, both may originate in one ovary or one in each.

Second, two embryos may develop from a single ovum (in which case they are always of the same sex). When originating in the first manner, each embryo develops its own chorion and placenta, but usually the two placentæ afterward become fused into one. In the second manner, only one chorion and placenta are developed. In cases of triplets, both of these modes of origin are usually combined, although triplets may originate from three separate ova.

Hydramnion, *hydramnios*, or *dropsy of the amnion* are synonymous terms used to signify an excess of the liquor amnii. The normal amount of amniotic fluid is usually estimated at two pints; an amount much in excess of this is considered pathological.

The *etiology* of hydramnion is yet uncertain. McClintock believes that the cause lies in the placenta, but is unwilling to carry his theory further than this. The old theory that syphilis is a cause has now few adherents. Playfair,¹ on good grounds, believes that there is no connection between this condition and the health of the mother, since in cases of twin pregnancies one ovum only is usually affected. Hirst² sums up the factors taking part in the etiology as due to either *oversecretion* or *deficient absorption* of the liquor amnii.

Oversecretion may be the result of the condition of the maternal blood which favors serous effusions generally, such as hydremia. It may be likewise due to an abnormal condition of the blood vessels of the cord and amnion, or to excessive secretion of the urinary organs or of the fetal skin. The influ-

¹ Op. cit.

² "Am. Syst. of Obstet.," vol. i., p. 225.

ence of the last two factors is demonstrated in cases of hydramnion in unioval twins, in one of which a more vigorous fetus is found, with hypertrophied heart and kidneys which increase the amount of urinary and dermal secretion. Another possible cause of oversecretion is amniotitis, or inflammation of the amnion, which, however, seems to be the least probable of all. Finally, the various causes mentioned may be combined, so that both mother and fetus may contribute to bring about this condition. That deficient absorption of the liquor amnii is sometimes a cause is extremely uncertain, although it is well known that the child swallows the liquor amnii, and the skin may absorb it to some extent. If normally reduced in this way at all, it must find its way out of the fetus through the maternal circulation.

The *symptoms* of hydramnion are excessive enlargement of the abdomen, often reaching such proportions as to cause dyspnea and displacements of the viscera; constipation; pains in the abdomen, pelvis, thighs, and back; edema of the lower extremities, etc.

The *diagnosis* is important and usually easy. Serious mistakes have, however, occurred. Dr. G. H. Buford¹ reports a case in which there was enlargement as high as the ensiform cartilage at the fourth or fifth month, which was diagnosed as ovarian tumor and an incision made through the abdominal walls, when, the nature of the case having been discovered, the fetus was delivered *per vias naturales* and the mother recovered. McClintock² calls attention to the large size and globular form of the uterus, absence of irregularities of contour, *absence* of fetal movements, and rapid increase in the size of the tumor. Ballottement is usually free and distinct. In connection with the above symptoms is also to be considered the presence or absence of the symptoms and signs of pregnancy.

The *prognosis* to the child is unfavorable. Of McClintock's³ forty-three cases, twenty were still-born and eleven died a few days after birth. The dangers to the mother are complications due to great pressure and to post-partum hemorrhage. Dr. E. H. Trenholme⁴ records a case in which the distention caused rupture of the decidua and internal hemorrhage.

¹ Brit. Med. and Surg. Jour., vol. ii., p. 125.

² Ingalls, Boston Med. and Surg. Jour., vol. cxviii., p. 13.

³ Obstet. Jour. of Great Britain and Ireland, vol. viii., p. 628.

⁴ AM. JOUR. OF OBSTET., vol. xx., p. 1081.

Treatment.—When the symptoms demand interference, Playfair¹ suggests—although he had not himself tried the plan—that a fine aspirating needle be introduced just within the cervix and a portion of the fluid withdrawn. Although I have been unable to find any mention of this suggestion having been adopted, it seems very feasible. By abdominal manipulation the child may be raised as far as possible toward the fundus and there retained until the needle, which may be curved and guarded by a canula, is introduced through the os uteri. The child would probably not be touched, and even if it were, the wound by a small needle would not be likely to result in serious harm. Hirst,² while merely mentioning the proposition made by others to aspirate through the abdominal walls, does not favor the plan, since the fetus is usually deformed or diseased, and hence does not warrant the risk entailed upon the mother by tapping. He therefore recommends rupturing the membranes in the usual manner, and thus inducing labor. In attending a case of this kind, it would be well to use the hand as a plug after the membranes have been ruptured, and allow the waters to escape slowly, and also to be prepared for post-partum hemorrhage, which is likely to occur from the sudden emptying of the overdistended uterus. If, however, the operation of aspiration could be done through the cervix, as suggested, without risk, it would be manifestly better to allow pregnancy to continue to term.

Monstrosities are chiefly of interest to the obstetrician on account of the uncertainty of diagnosis which is caused in the mind of the examiner when he finds an object of this kind, the nature of which he is unable to make out; and from the obstruction offered to delivery, as in cases of double monsters. There is such a vast number of forms of monstrosity that no rules can be laid down for their diagnosis in utero, since rare, and sometimes previously unheard-of, forms may be met with.

The *causes* which lead to the production of such abnormal development of the embryo are yet more or less shrouded in mystery, although some recent experiments have thrown a good deal of light upon the subject. As to how far maternal impressions may influence this deviation of Nature from her usual path is an open question.

¹ Op. cit.

² Loc. cit.

The experiments of W. Roux¹—which line of investigation, I believe, has also been carried on by some others—have established a theory supported by more tangible evidence than any yet offered. While the results of his experiments—which can hardly be more than mentioned here—do not show a possible cause for the production of all forms of monstrosity, they certainly prove a theory for the production of many forms, especially those in which some portion of the body is wanting.

In his experiments the fertilized ova of green frogs were used. When segmentation had taken place, one of the half cells was wounded with the heated point of a needle, after which the artificially procreated cell resulted in the production of a half embryo. His experiments were carried on to such an extent that he could produce at will various deformities by wounding various portions of the original segmentation cells. What is true of the ova of frogs will doubtless apply likewise to those of human beings. They show the extreme probability of deformities in the human embryo being caused by accidents and injuries occurring to it during the early stages of its development.

CASE.—On the morning of August 3d, 1889, at 1:30 o'clock, I was called to attend Mrs. E. S., German, æt. 23, in her second confinement. I attended her in her first, in May, 1888, at which time she was delivered of a healthy child after a normal labor. She stated that she was between five and six months pregnant, but that her abdomen was larger than at term of her last pregnancy. Labor pains had commenced several hours before my arrival. On examination, a prominent, "glove-fingered" projection of the bag of waters was found presenting. The os uteri was well dilated, and while making the examination a sudden pain ruptured the membranes and the waters spurted with great force, being thrown several feet, and in such quantities as to deluge the bed and run upon the floor. I should judge the amount was several gallons. On introducing the hand, a foot presentation was found and the child delivered. It soon manifested signs of life and lived about an hour. The hand was again introduced, and a smooth, oblong body was felt, the nature of which I could not make out. It was evidently not a head, nor could I make out any resemblance in it to any part of a child. The hand and arm, having now been scoured and disinfected, were introduced into the uterus, and I soon discovered that the queer object was a monster, as the imperfectly formed feet and legs

¹ "Beiträge zur Entwicklungsmechanik des Embryo," *Virchow's Archiv*, Band cxiv., Heft i., Seite 118.

could be made out. It was turned and delivered, and proved to be a hideous acephalic, acardiac, athoracic monster. At most, these terms do not express its nature. Reintroducing the hand, a third fetus was found and delivered still-born. Like the first, its development was normal. The placenta was then removed and the patient left in good condition.

On examination, this monster was found to be void of a head, arms, thorax, stomach, liver, spleen, and all abdominal viscera except the lower part of the small intestine, the large intestine, kidneys, and bladder. These latter seemed to be normally developed. The five lumbar vertebræ were present, but none above these. The large, oblong mass occupying the position of the trunk was simply a watery mass of flesh. No resemblance



Front View.



Side View.

to features could be made of the dermal covering except a small projection, about the length of a nose, immediately beneath which the umbilical cord was attached. In the photographs, taken a few days after it had been immersed in alcohol, there is a fancied resemblance to a face, caused by the wrinkling of the skin, but on close inspection this is shown to be only smooth skin like the rest of the covering. It is possible, however, that there is a thinning of the skin at the normal points for the development of the orbital and oral cavities, which resulted in the wrinkling at these points, giving it the appearance of a face. The feet are clubbed, one having only one toe, while the other has five. The sex is female, the vagina being quite well developed.

The placentæ formed a single mass, doubtless by fusion, and I regret that it was destroyed before I thought to examine it.

The specimen is to me one of unusual interest on account of the complete lack of development above the lumbar vertebræ, differing in that respect from any I have found reported.

VAGINAL HYSTERECTOMY.¹

BY

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ALTHOUGH vaginal hysterectomy has been much discussed of recent years, it is not a modern operation. The superficial observer would suppose that Freund, in 1878, was the first to direct attention to the advisability of the removal of the uterus for malignant disease, and that his work had led Czerny to the study of the subject; but closer investigation shows it of earlier origin. Andreas Crucé, in 1560, probably did the first operation for the removal of the uterus. A prize was offered in 1810 for the best essay upon the subject, which was awarded in 1814 to Guthrie, who presented rules for the abdominal operation. Sauter (1822) removed the uterus by the vagina, and the operation was repeated by Langenbuch, Blundell, Recamier, and others, so that West was able to present a collection of twenty-five operations, of which twenty-two died.

Naturally this terrible mortality led to the discontinuance of the procedure. Czerny did the first vaginal hysterectomy according to modern methods, April 12th, 1879; but the difficulties of the procedure so impressed him that his next two operations were done by Freund's method, and it was not until the operation had been several times successfully done by others that he returned to the vaginal method. The eagerness with which this procedure has been accepted can be appreciated when it is known that the results of several hundred operations can be presented and individual operators present lists numbering sixty and eighty cases.

¹ Read before the American Association of Obstetricians and Gynecologists.

As in all operations, it is important to determine the class of cases to the treatment of which it can be appropriately applied. A glance at the literature shows that this procedure has been practised for the cure of cancer of the cervix and body of the uterus, prolapsus in its varying degrees, retro-displacements, endometritis, and various nervous disorders.

The present paper will discuss its application to the treatment of cancer ; at the same time we would deprecate the wide latitude that has been given it, believing, indeed, that the cases are rare in which it is even applicable to the treatment of prolapsus.

In malignant disease, it may be said to be indicated in every case in which the disease is yet confined to the uterus. Experience has shown that the radical cure is more certain when the body is the seat of the onset ; so evident has this been that some have advised to confine the operation to disease of the internal os, giving the high amputation preference where the cervix only is involved. We cannot, however, but coincide with the opinion of Brennecke, that when any portion of the uterus is the seat of cancer, however slight, extirpation of the whole organ is indicated.

For the performance of the operation, the uterus should be freely movable ; the disease should not have involved the vagina, the cellular tissue, the broad ligaments, or the pelvic lymphatic glands. The presence of any of these complications may be considered as to that degree contra-indicating it. It must be remembered, however, that the uterus may be fixed by a parametric inflammation, and not from the extension of malignant disease. In every case, the affected organ should be carefully examined through the rectum, and when nodular masses can be felt in the broad ligaments the operation should be decided against.

The work of a number of operators demonstrates that the operation is not necessarily a dangerous one.

Maurice Hache (*Rév. Sc. de Méd.*, Paris, xxix., 721-739) gives an analysis of 495 operations, in which the absolute mortality was 24.29 per cent.

When it is remembered that this is the work of a large number of operators, it will be seen that the mortality is but little if any greater than that of ovariectomy. In skilful hands, the mortality is less than 10 per cent. Staude has done 20 and

Brennecke 21 operations without a fatal case ; Leopold 48 operations, with but 3 deaths. Munchmeyer has lately given the results of the obstetrical clinic at Dresden, where, from 1883 to 1889, 80 vaginal extirpations for carcinoma have been performed, with 4 deaths—a mortality of 5 per cent.

As operators better appreciate the importance of a proper selection of cases, the average mortality will be reduced to between 5 and 10 per cent. The first consideration in any operative procedure must be the danger, which, by the statistics just quoted, is seen in this to be comparatively slight. In addition to this, however, in order to justify ourselves in advising and urging an operation, it must be shown that it is effective in accomplishing the purpose for which it is suggested. If it does not give some hope of a radical cure, it is not wise or right to subject our patients to so difficult a procedure, and one not unattended with danger, however careful the operator.

Of the 495 cases analyzed by Hache, 23 in each 100 succumbed to the operation ; in 15 it returned in three months, in 13 in from three to six months, in 10 in from one to two years ; 26 are still well at the end of two years.

Of 80 cases from the Dresden clinic, 4 died from the immediate effects of the operation, 10 from the recurrence of the disease, 4 from intercurrent affections.

In 41 cases operated upon during the last year there has been no recurrence. Of 17 women operated upon two years ago or over, none has had a recurrence. Among the last series are 3 who have had no recurrence for three years, 1 for four years, and 1 for five years. A case in which Freund removed the uterus by laparotomy, in 1878, for cancer of the neck, is still alive.

In comparison with other operations, that of Freund, with its 71 per cent mortality, is not to be considered.

Supravaginal amputation of the uterus for cancer of the body is attended with a mortality of 28.5 per cent, with ultimate recovery from disease of 14.4 per cent out of 100 operated upon.

Supravaginal amputation of the neck, according to Schroeder, has a mortality of 12 per cent, with the definite recovery of 10.56 per cent. Martin, however, asserts that the results in the hands of others have not been so favorable.

Pawlik (Wiener Klinik) gives the result of 136 amputations of the cervix with the galvanic cautery as follows : Mortality of

the operation, 7 per cent; definite recovery, 100 cases, 6.5 per cent.

Vaginal hysterectomy done under the later and more approved methods is scarcely more fatal than the partial operation, while the increased immunity against the return of the disease more than justifies the slightly increased risk.

The results of the operation do not compare unfavorably with extirpation of other organs for similar conditions. Thus Billroth fixed the mortality of extirpation of mammary glands, with the removal of the glands from the axilla, at 10 per cent. In Küstner's service, later, this was found to be 5.2 per cent.

In the face of such statistics, it seems difficult to find justification for the following conclusions from a paper by A. Reeves Jackson in 1883, and practically repeated in a paper before the International Medical Congress of 1887, in which he says:

"1. The diagnosis of uterine cancer cannot be determined sufficiently early to insure its complete removal by extirpation of the uterus.

"2. When the evidence can be established, there is no reasonable hope of effecting a radical cure, and other methods of treatment, far less dangerous than excision of the entire organ, are equally effectual in the amelioration of the suffering, and retard the progress of the disease and prolong life.

"3. Extirpation of the uterus is highly dangerous, and never lessens suffering except in those whom it kills, and does not give a reasonable promise of recovery, and should not be adopted in modern surgery."

The methods of operating are almost as many as the number of operators. The lithotomy position for the operation is the one observed by the majority of operators, although a few prefer the Sims. Some first open the anterior fornix of the vagina, and others the posterior, while Staude emphasizes the importance of suturing and separating the lateral tissues as the preliminary step. Then the uterus is anteverted, retroverted, split into two halves, or drawn down in situ. The broad ligaments have been ligated en masse or in sections. The wound is treated by suturing the peritoneal surfaces, the vaginal surfaces, or both; or the peritoneal and vaginal edges are brought together by sutures, thus covering the cellular tissue; or it is treated as an open wound, without the use of sutures. Some use drainage, others not; so also with the vaginal tampon. Three

important considerations to be kept in mind should be hemostasis, asepsis, and securing proper drainage. In the past, the control of hemorrhage has principally been accomplished by use of the ligature, either en masse or in sections. The objections that may be made to this method are : the difficulty of application in a narrow vagina, where the uterus is not readily displaced downward ; slipping of ligatures, and hemorrhage from vessels which after retraction are difficult to reach ; the length of time necessary for the introduction and tying of the ligatures ; and the danger of including and compressing the ureters. The latter danger is much increased by the almost necessary eversion of the fundus uteri, either forward or backward. Some have applied forceps, cut away the uterus, and afterward ligated the stumps ; others have found it necessary to leave the forceps in place to prevent the ligatures from slipping. The control of hemorrhage by forceps was suggested by Spencer Wells, Knowsley Thornton, and others, but Richelot was probably the first to rely upon them for this purpose.

They afford the following advantages : First, it is unnecessary to change the position of the uterus, and we thus save the danger of infecting the peritoneal cavity with the discharge from the diseased parts ; second, there is more complete control of the broad ligaments, with the vessels which traverse them ; third, there is less danger of including or injuring the ureters ; fourth, it is unnecessary to provide other or special means for drainage ; and fifth, they afford a great saving of time. By the old method of eversion of the uterus, ligation of the ligaments, suturing of the peritoneum, and drainage, the operation required from one and one-half hours to four hours for its completion ; by the use of the clamps, the operation can be accomplished in from fifteen to thirty minutes.

The plan of procedure we would recommend would be : First, thorough washing and disinfection of the external genitalia, the vagina, and the uterus. Where there is much sloughing diseased tissue, previous curetting, application of iron, and packing the vagina with iodoform gauze should be practised. Second, with bladder and rectum empty, the patient is placed in the lithotomy position, the uterus exposed by perineal and side retractors, and seized with strong vulsellum forceps. The three- or four-pronged instruments are better for securing and retaining a hold on the diseased tissues. Third, after

thorough irrigation of the cavity, an incision with knife or scissors—preferably the former—is carried about the cervix, severing the vaginal mucous membrane. Care should be observed, anteriorly, as to the relation of the ureters and bladder. If vessels of any size are opened (which is rare), they may be secured by hemostatic forceps. Fourth, keeping close to the uterus, the tissues are separated, anteriorly and posteriorly, until the peritoneum is reached. In this process, the vulsellum has the advantage over the suture sometimes used, in that with them the cervix can be elevated or depressed at will. Fifth, after renewed irrigation and sponging-out of the vaginal canal, an opening is made first through the posterior cul-de-sac, the peritoneum torn through with the finger up to the broad ligaments, and a large sponge inserted, to which a ligature for its withdrawal is attached. The sponge serves a double purpose—retaining the intestines and preventing the soiling of the peritoneum. The opening is then made through the anterior peritoneum; this may be expedited by passing two fingers behind the uterus over the fundus, and pressing through the peritoneum, against them, a pair of forceps. The fold should then be torn down to the broad ligament upon either side. Sixth, hooking down the broad ligament with the finger or a blunt hook, a clamp or pair of forceps is applied to one and then the other close to the uterus, the latter cut away with the knife and withdrawn. Seventh, the cavity is carefully sponged, any bleeding points in the anterior or posterior walls secured with the forceps, and the sponge withdrawn from behind the uterus. Its withdrawal drags down the torn edges of the peritoneum, so that the surfaces lie in contact. Eighth, a tampon of iodoform gauze is placed in the vagina, which, with the forceps, acts as a drain. It should not be carried so high as to separate the peritoneal surfaces.

After-Treatment.—Judging from my own experience, the operation is usually followed by considerable shock, and temperature varying from 95° to 97°, most probably due to the sympathetic system from the constriction of the pelvic nerves in the broad ligaments. The clamps may be removed at the end of twenty-four to thirty hours. The gauze may be permitted to remain until the end of the third or fourth day. After its removal, the vagina should be irrigated two or three times daily with a two-per-cent carbolic acid solution, or a 1 to

5,000 solution of acid sublimate. After the fifth day, drainage may be promoted by permitting the patient to assume the semi-reclining position, and she may be allowed to sit out of bed at the end of ten days. In an ordinary case the temperature is but little higher than normal.

It has been my privilege to operate but three times ; the histories of the cases will be briefly related.

CASE I. (reported in the *Philadelphia Med. Times*, March 15th, 1889, p. 409).—Mrs. McC., æt. 40 years, mother of two children, was seen with Dr. Nock. She had suffered from hemorrhage, pain, and an offensive discharge for some months. Competent microscopists had pronounced the disease malignant. Uterus freely movable, and the disease confined to the cervix.

October 4th, 1888, assisted by Drs. Nock, West, and Rively, and Messrs. Croskey and Maier, the uterus was removed. Patient in lithotomy position; the vaginal tissue cut by the knife, and pushed off before and behind until the peritoneum was reached; the latter was opened posteriorly and a large sponge introduced. In the care to avoid injuring the bladder, the dissection was carried into the structure of the uterus, lengthening the operation. The dissection was completed by carrying two fingers behind the uterus and over the fundus. After opening and tearing off the anterior peritoneum, the organ was anteverted, the broad ligaments seized with forceps, and the uterus cut away. The forceps sprung, permitting a portion of the ligaments to slip through. Some bleeding vessels were seized with forceps, so that the patient was returned to bed with eight forceps hanging from the vagina. An iodoform tampon was introduced. No sutures and no further drainage. Duration of operation, one and a half hours. The small forceps were removed at the end of thirty hours, and the large ones in sixty. The convalescence was very satisfactory and attended by no unpleasant symptoms; maximum temperature, 100°.

August 23d, 1889, I made a careful examination of this patient and found the tissues healthy, general condition good.

CASE II.—Mrs. D., æt. 51 years, mother of several children, ceased to menstruate at 46. A year ago had a return of bloody discharge, which at times since has amounted to a hemorrhage. Pale, weak; cervix healthy; body of uterus enlarged and hard; the introduction of a small probe followed by bleeding. Scrapings obtained by curetting the cavity were negative. Age of patient, interval after menopause before the return of the flow, size and density of the uterus, with frequent lancinating pains, led to the diagnosis of probable carcinoma of the body.

February 14th, 1889, vaginal hysterectomy. After separation, front and back, uterus with difficulty anteverted; clamps applied after some effort; uterus removed, and the parts carefully

sponged and tampon introduced. Clamps were removed at the end of seventy-two hours. Temperature immediately after the operation, 96.2°. Subsequent progress normal. The examination of the uterus did not confirm the diagnosis of malignant disease. Duration of the operation, thirty minutes.

CASE III.—Mrs. S., æt. 42 years, mother of two children; hemorrhage for years, considerable pain, and an offensive discharge. Uterus freely movable; no thickening of the broad ligaments, but the cervix was excavated and the vaginal portion destroyed. Cavity curetted and packed with iodoform gauze.

July 5th, 1889, assisted by Dr. Wathen, of Louisville, Dr. Sangree, and Mr. Maier, extirpation was done. The operation was rendered difficult by the loss of the vaginal cervix, by a long, narrow vagina, and by inability to depress the uterus, which was hypertrophied. Was unable to pass the finger above the broad ligament, so burrowed through it below the ovarian artery, and applied a clamp on either side and cut away the portion of ligament compressed, thus enabling the uterus to be so depressed that the forceps could be applied above the ovaries, and those organs were removed with the uterus. Toilet of the vagina, and a gauze tampon introduced. Duration of operation, thirty-five minutes. Temperature, 95°; became normal in a few hours. Clamps were removed in twenty-eight hours. Subsequent progress excellent for one week. Played with dog on seventh day; the following day complained of stiffness of the jaws, which developed into severe tetanus, from which she died on the fourteenth day.

In the first two operations, the uterus was anteverted; this in one was a difficult procedure, in both was unnecessary and added to the difficulty of the application of the clamps. The third case gave every promise of recovery for the first week: we can only ascribe her death to our imprudence in not guarding against the possible infection with the bacillus tetani from the dog.

Upon careful consideration of the operation of vaginal hysterectomy, we feel justified in arriving at the following conclusions:

1. That in all cases of cancer confined to the uterus, whether of the body or cervix, vaginal hysterectomy is the only justifiable operation.
2. The operation, when performed under proper precautions, is not necessarily attended with a greater mortality than is ovariectomy, and should be as urgently advised.
3. The operation should be done as early as the diagnosis can

be determined; and when the condition is one of doubt, the patient should be given the benefit of it and the organ removed.

4. The control of the hemorrhage by the forceps or clamp, and the open treatment of the wound, are the choice procedures.

A NEW OBSTETRIC FORCEPS.

BY

HENRY D. FRY, M.D.,
Washington, D. C.

(With woodcut.)

THIS instrument is designed for application to the sides of the child's head before forward rotation of the occiput has taken place.

The difficulty of adapting the blades of the ordinary forceps to the biparietal diameter of the head, and in some cases the impossibility of so doing, led to its construction.

The idea of altering the classic forceps in such manner that the pelvic curve of the instrument would be placed on the flat surface instead of the edge, was entertained for some time before taking steps to have such an instrument constructed. During the winter of 1888-'89, I consulted Messrs. Tiemann & Co., of New York, and, after experimenting and altering the model made, I finally adopted the design here presented.

It is practically a straight forceps with the pelvic curve on the flat, if I may be permitted to use such an inaccurate expression. Not having, at that time, referred to the literature of the subject, I was ignorant of what attempts had been made in this direction.

History of Antero-posterior Forceps.—In 1805, Uytterhoeven, of Brussels, conceived the idea of having constructed a pair of obstetric forceps curved upon the flat, and having a long posterior and a short anterior blade. It was designed to seize the sides of the head when placed transversely at the superior strait. He introduced the anterior blade first, directing it along the antero-lateral wall of the pelvis and adjusting

it behind the pubic arch. The posterior blade was next introduced opposite a sacro-iliac symphysis.

The effort of Uytterhoeven failed to meet approval and was forgotten.

The same fate awaited M. Baumers, of Lyons, who in 1849, and probably without knowledge of Uytterhoeven's instrument, had a forceps made on the same principle.

Tarnier¹ also mentions that Leake designed a forceps having attached to it a third blade which was intended for application in front.

This, as far as I was able to ascertain, is all that had been accomplished in the way of constructing an antero-posterior forceps.

Very recently, however, two other instruments of this class have come to notice.

Dr. Samuel Sloan, of Glasgow, presented to the Section of



Obstetric Medicine,² at the last annual meeting of the British Medical Association, a paper entitled "Antero posterior Compression Forceps for Application at the Brim of Flat Pelves." The instrument which Dr. Sloan presented was a powerful compressor, and he devised it for use in cases of flat pelvis when the only alternative was craniotomy. In the discussion which followed the reading of the above paper, Dr. W. L. Reed, of the same city, showed a pair of antero-posterior forceps which he stated he had been using with satisfactory results for seven or eight years.

The forceps which I desire to bring to the notice of the profession consists of a long posterior and a short anterior blade.

The posterior blade presents but one curve, a cephalic and a pelvic curve combined.

The anterior blade has its two curves in opposite directions.

¹ "De l'application du forceps au détroit supérieur." Par le Dr. Gabriel Lepage. Paris, 1888.

² British Med. Journal, Feb. 2d, 1889.

The concave surface of the cephalic curve looks backwards, and that of the pelvic curve forwards.

The shape of the blades and the distance between them are the same as White's modification of Hodge. The shanks are long and placed laterally. Siebold's lock is employed. The handles are constructed of hard rubber.

The length of the instrument, measured in a straight line from the tip of the posterior blade to the end of the handle, is sixteen inches. From the same point to the lock is nine and one-half inches. The length of the handle is five inches.

The Use of Antero-posterior Forceps.—The purpose for which this variety of forceps is constructed has been explained already. Either it has failed to fulfil that purpose in the past, or the classic forceps has proved itself a more effective instrument in all cases.

The cause of failure of the instrument designed by Bauerns was evidently its faulty construction. The representations¹ of this forceps depict an exceedingly crude-looking instrument having an exaggerated pelvic curve. The concavity of the long posterior blade looks downwards and forwards, and overhangs the anterior blade, the concavity of which presents upwards and backwards.

In Witkowski's² recent work will be found drawings of this forceps, as well as the comparatively superior instrument of Uytterhoeven.

In criticising these forceps, Poulet³ said: "No one claims to have ever succeeded in applying them to the living child; the instrument is therefore purely a theoretical one."

Was that distinguished accoucheur ignorant of what his compatriot, Cazeaux, had said of the forceps of Bauerns? "To render the biparietal application possible," wrote the latter, "M. Bauerns, of Lyons, has constructed a new forceps, *which I have had occasion to try, and which appears to me to overcome the difficulty mentioned*. I am convinced that the biparietal application of the blades, which is impossible with the ordinary forceps, is sometimes easy with that of M. Bauerns, and I think it right to recommend their application in the transverse position."

¹ See Charpentier, "Practical Treatise on Obstetrics."

² "Histoire des Accouchements."

³ Lepage, *ibid.*, p. 16.

The compression of the head with forceps strictly in the antero-posterior direction and coincident with that exercised by the pelvis, Poullet mentions as representing a useful idea if it can be accomplished practically.

The experiments made by Dr. Sloan with his instrument, and the statement of Dr. Reed that he had successfully employed such a forceps for a number of years, would indicate that it can be, and has been, accomplished.

As far as the instrument I offer to the profession is concerned, I can testify that it is applied to the sides of the head with as much ease as the ordinary forceps is inserted to the sides of the mother's pelvis, and with more facility than the latter is often adjusted to the biparietal diameter of the head when transverse or oblique.

When introducing the blades, I prefer to adjust the anterior first. The posterior blade should always be passed opposite one or the other sacro-iliac synchondrosis, and then, by a sliding movement, brought into position in front of the sacrum. Any attempt to insert this blade in position by passing it up directly in front of the sacrum might cause the tip to injure the child's head or the soft parts of the mother.

When the instrument is applied to the head in the pelvic cavity, with the occiput to the right or left, little effort is required to rotate the occiput forwards. In many cases, all that is necessary is to start rotation and it will be completed without further assistance.

When applied to the sides of the head, situated transversely at or above the superior strait, no effort should be made to cause forward rotation of the occiput until the head has been brought well down into the pelvic canal. It should be remembered that rotation is one of the terminal movements of the head—a movement that is often deferred until the influence of the perineal muscles is felt. Premature attempts to bring the occiput forwards will only result in harm.

The traction rod and compression screw are intended for use in high application of the forceps. After the blades have been adjusted, and the amount of compression necessary been secured by the screw, the hook at the end of the rod is fastened into the fenestrum on the anterior blade. Traction is then made with the right hand, while the left grasps the handle of the forceps merely to steady it.

After the head has been brought through the inlet, the tractor can be removed and the method of Pajot adopted by grasping the shank with one hand and the handle with the other.

IN MEMORIAM.

ELLWOOD WILSON, M.D.

DR. WILSON was born near Attleboro, Bucks Co., Pa., on February 4th, 1822. His early boyhood was passed on his father's farm, with only such educational advantages during that period as were furnished by a country school and the village library. He early developed a fondness for books, and read extensively such as were then attainable.

In 1841, he went to Philadelphia, and became an apprentice in the drug-store of Edward Parrish. He qualified as a pharmacist, and remained with Mr. Parrish until 1845. While thus occupied in the drug-store he studied medicine, and was graduated from the Jefferson Medical College in 1845. In the same year he was appointed visiting physician to the Philadelphia Dispensary, with which institution he retained his connection for several years. Professor Charles D. Meigs soon recognized the ability, skill, and energy of the young obstetrician, and secured his services as his assistant. Doubtless this early and intimate association with the learned and busy Professor of Obstetrics stimulated greatly Dr. Wilson's love of obstetrics, and added also largely to his practice and experience. Upon the retirement of Dr. Meigs, Dr. Wilson fell heir to much of his obstetrical work.

In 1846, Dr. Wilson became associated with Dr. Warrington in the Philadelphia Lying-in Charity, then known as the Obstetric Institute of Philadelphia. In this position he demonstrated his abilities as a teacher of obstetrics, and he had the largest private classes then in this country. Upon the retirement of Dr. Warrington, he succeeded him in that institution.

In 1862, the private practice of Dr. Wilson had become so large that he resigned his position in connection with the Lying-in Charity, whereupon the managers elected him president of the board. This position he held at the time of his death. Throughout almost every section of this country may be found

representatives of the large classes taught by Dr. Wilson. Among this large number may be mentioned Dr. Robert Battey, of Rome, Georgia.

Dr. Wilson was a gynecologist as well as obstetrician. His abilities in either capacity were of a high order. He was the first in this country to establish a dispensary for diseases of women, and the first to teach gynecology clinically. With Dr. Warrington he was the first to found and conduct a training school for nurses. He personally delivered more than 14,000 women, and saw all the difficult labors of more than 20,000 deliveries in connection with the Philadelphia Dispensary and the Lying-in Charity, besides being frequently in consultation in labor cases with other practitioners.

For a number of years prior to his death, he was a consulting physician to the Woman's Hospital, and was at all times favorable to the medical education of women. Dr. Wilson was also consultant to the Preston Retreat, and one of the managers of the Jefferson Medical College. In the latter capacity he strongly favored the advanced curriculum now adopted by that college.

Dr. Wilson was so busy as an active practitioner that he added but little to medical literature. He was, however, one of the founders of the Philadelphia Obstetrical Society, and at one time participated actively in its proceedings. He became engaged in a discussion with Dr. William Goodell upon the relative value of podalic version and forceps delivery in narrow pelvis, and submitted several papers upon the subject. This discussion awakened wide interest in the profession, although too highly spiced with personalities on the part of both of the principals.

Dr. Wilson was also a member of the College of Physicians of Philadelphia, and of the American Medical Association and of the County and State Societies. He was also a member of the American Gynecological Society, and at one time its vice-president. Before the latter Society he read a paper on "Tarnier's Forceps" and another on "The Treatment of Recent Laceration of the Cervix."

Dr. Wilson had probably as large an obstetric practice as any one in this country. On one occasion he attended nine cases of labor in twenty-four hours. With such vast opportunities for observation, the practical information possessed by him was almost unlimited, and he gave his patients the benefit of it. Had he found the time to lay before the profession his observations and conclusions based upon his own experience, obstetrical literature would have been greatly enhanced. Too often the busy

practitioner does not write, and too often journals and even text-books are replete with the views of writers inexperienced in practical medicine.

Dr. Wilson was a man of strong character and positive convictions. His patients were firmly attached to him, though he was an autocrat in the sick-room and made everything yield to a consideration of the welfare of the patient. Untiring energy, persistent application to his professional work, and decided abilities made him an exceptionally successful man. He died at his country seat near Philadelphia on July 14th, 1889.

WILLIAM H. PARISH.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

Stated Meeting, March 19th, 1889.

The President, DR. HORACE T. HANKS, in the Chair.

KÜSTNER'S BLADDER DILATOR.

DR. H. J. BOLDT.—At the last meeting of this Society, Dr. Sims read a paper in which the question of dilatation of the bladder with water was discussed. I then took occasion to speak of the way in which this had been done by Nissen, of Christiania. The instrument used by him was Professor Küstner's bladder dilator, which I now take pleasure in presenting to the Society. It can be obtained of Reynders & Co. It consists of a short, straight catheter, made of glass or hard rubber, the outer end expanding into a funnel, whereby the urethra is completely occluded and the escape of the forcibly injected water prevented. During introduction it contains an obturator, which is afterward withdrawn, and attachment is made to the tube leading to the fountain.

I may say that, the day following the reading of Dr. Sims' paper, I had opportunity to employ the method with the Davidson syringe on a patient who had contraction of the bladder and consequent non-retention of the urine, and it seemed the syringe acted better than the irrigator. In the first place, it is handier; and, in the second place, it seems that the pressure can be better graduated than with the irrigator.

DR. SKENE thought the stem of the instrument was so long that it would impinge on the walls of the contracted bladder and do harm.

DR. MALCOLM MCLEAN was of the same opinion, and added that

he had been able to distend the bladder sufficiently with the soft rubber catheter without any expansion to prevent the regurgitation of fluid. It was desirable to make distention gradually, and thus avoid, as far as possible, tenesmus.

DR. R. A. MURRAY had employed, in distending the bladder, a double-canulated catheter, the second canula going off markedly at an angle from the first. If the patient complained of pain from overdistention, it was relieved at once by taking the thumb off the end of the second canula and allowing some of the fluid to escape.

DR. BOLDT said the same fact was accomplished, in the use of the instrument presented, either by allowing some of the fluid to escape by its side or by removing the nozzle of the syringe from the funnel.

COMBINED STEM AND RETROVERSION PESSARY.

THE PRESIDENT showed a stem pessary, or plug, which was held in situ by means of an Albert Smith pessary having two solid rubber strings strung antero-posteriorly from the anterior angle of the pessary to the posterior bar. The common Albert Smith pessary, pierced with a small hole at the posterior bar, will allow the passage of the rubber ring cord, which when through can be quickly fastened by a slip-noose or tied; then in front or at the small angle of the pessary is a small peg, so attached that the rubber ring cord can be easily and quickly fastened to it. These two rubber cords—which are the common rubber rings which you may buy at any stationer's—running from front to back, are so near together, like the strings of a fiddle, that they will hold as firmly as may be needed the stem at the pouch of the head where the grooves have been filed. This stem is grooved, as you see, to admit of perfect drainage. It is made of glass or hard rubber. Just at the head is seen the groove in which the rubber cords are to ride.

To insert the instrument, the patient should assume the knee-chest position. Then with a Sims speculum the cervix should be exposed and held firmly with a tenaculum while the stem is being inserted. Then, with forceps or a tenaculum, the head of the stem is passed between the rubber cords, which are allowed to slip into the groove in the head. The stem is held firmly or loosely, as may be desired, the tension of the rubber ring cord which is used always determining this. If a retroversion is to be corrected, it should be held somewhat firmly, while for simple stenosis of the internal os, in a uterus in perfect position, only slight fixation is required.

Others have devised instruments somewhat similar in their action, but there are none so easily manufactured, so easily inserted, and so comfortable and effectual in doing the work which is required of a stem pessary.

DR. WYLIE having asked the President for what purposes he employed the stem pessary, he replied that he used it in retrover-

sion where there was a very small vaginal cervix, and after divulsion where it was desired to keep the cervical canal dilated and to maintain drainage.

Being also asked how long he kept it in, he said the time varied with the susceptibility of the patient to the foreign body. Some patients could wear it three months without any damage whatever. He then had a patient still wearing it with perfect comfort, it having been inserted a fortnight ago.

DR. GRANDIN.—The instrument suggests one which Dr. Kinlock, of South Carolina, has devised, and which is figured in some of the text-books, although in it the rubber band is transverse to the pessary instead of longitudinal. It seems to me that where a stem is to be used at all in conjunction with a retroversion pessary, the instrument shown to-night possesses decided advantage over the cup, in that it allows the uterus to undergo its normal movements. In other words, the organ is not fixed in any one position. Personally I have not found the stem of much use, and I have had one or two experiences with it which have rather taught me not to use it for retention of the uterus if the object can be accomplished without. As for drainage after divulsion, I think we can get as good drain without the stem as with it. A small piece of iodoform gauze inserted into the cavity and projecting from the cervix will act as an efficient drain, and the uterus will tolerate this better than a hard-rubber stem.

DR. WYLIE.—My idea of a stem is that it should not be used as a pessary. I do use a hard-rubber drain, or plug, as I prefer to call it. I wish it to be understood that the object is not to replace or keep the uterus in position, but simply to overcome the tendency to contract, or to secure drainage. For a long time I have taught that these things are dangerous, and if patients go about with them they are very dangerous. I have operated upon at least four or five cases of salpingitis and ovaritis directly due to the stem pessary, which had been put in and the patient allowed to go away. I find that by taking patients in whose cases the stem pessary is supposed by some to be called for, thoroughly divulsing, making application of carbolic acid, and inserting a hard-rubber drain and allowing the patient to wear it a week or two, I accomplish all that can be done by the stem pessary. I believe stem pessaries do cure some cases of dysmenorrhea and accomplish something. But it is because the canal is first dilated, and then their presence acts as a counter-irritant or alterative. But I prefer to speak of them, not as pessaries, but as drains.

My first objection to the instrument presented by Dr. Hanks is that soft rubber, unless watched closely, readily becomes septic, and is much more liable to result in poisoning than is hard rubber. I should be afraid to send the patient away with it. Sometimes when divulsion is performed and a stem introduced, there is a tendency for the uterus to contract and expel it. That is overcome by a pledget of iodoform gauze.

DR. POLK.—As Dr. Wylie's object in using the plug is to establish drainage, he might dispense with it altogether and introduce iodoform gauze.

DR. GRANDIN.—I have been doing that the past six months. After divulsion, I at once stuff the cavity with iodoform gauze, leaving it in four or five days, then removing it and introducing fresh gauze. The patient is allowed to go about. I must confess that my results after divulsion during this time have been much

better than formerly when I introduced a pessary into the uterus either for drainage or to keep the canal straight.

DR. POLK.—To illustrate, a few days ago I operated in a case of pancreatic cyst, but, as the stomach lay directly over it, it was necessary to make a second opening. It was then found that the cyst was so far removed from the abdominal wall that it was impossible to bring it up and stitch. I simply pushed the intestines aside, stuffed in iodoform gauze, and left it in a week. Now, if the peritoneal cavity will put up with that amount of pressure, the uterine cavity surely will.

My experience has been identical with that of Dr. Grandin. It has appeared to me important to get at the root of this matter. We have to deal with a canal which has constricting fibres at the internal os, that, by their contraction, interfere with drainage. Those who use stem pessaries or plugs show thereby their recognition of this fact. Now, we know perfectly well that capillary drainage does as well as any other form. This is proven in laparotomy and other operations. But besides drainage we get the effect of the medicament contained in the gauze, whether it be iodoform or some other substance, which is certainly beneficial to the mucous membrane. If the gauze be inserted as it should be, I am sure the danger attending its use is less than that attending the use of the stem plug or stem pessary.

DR. WYLIE.—Dr. Polk has understood me correctly, that my object in inserting the stem is not to retain the uterus in position but to establish drainage. But I use it almost exclusively in cases characterized by an imperfectly developed, hard cervix which, even under ether, cannot be divulsed to any great extent; one cannot, without rupturing the uterus, introduce anything larger than a lead pencil. The reason why the operation often fails in the hands of many physicians is that they do not succeed in getting through the internal os, although they think they do. The cervix being so elastic, it stretches, and the operator may think he has passed through it when he has not. I should feel very doubtful whether in such cases the iodoform gauze could be passed in. Besides, the plug has proven so satisfactory in my hands that I have no object in changing my method of treatment. If the uterus be large and heavy, I usually first reduce it in size. Unless it is indurated and hard, I do not put in a plug. I should not be afraid of iodoform gauze, but I do not believe it could be applied in a markedly indurated, anteфлекed uterus, in which alone I employ the plug.

DR. POLK.—So far as concerns Dr. Wylie's objection, I may say that in the two cases in which I applied the iodoform-gauze drainage, the condition present in the uterus was just that which he has described, yet I was enabled to pack the cavity with the gauze perfectly. One can dissect the bladder away from the uterus, if he choose, as high as the middle of the body. I do not mean to say that it is necessary to do that, but that the reflexion of the peritoneum is such that it would be perfectly safe if necessary. Make your incision across the anterior wall of the vagina, and, if you choose, above the line of the internal os; but in these cases it is not necessary to go so far. Slit the cervix anteriorly, and you will be able to go through into the uterus, however much contracted the cervix may be.

A most marked case of that kind presented itself to me three months ago, in which I adopted that procedure and cured the

patient. Her condition had been precisely that which Dr. Wylie speaks of—a very large uterus, a very small cervix which, no matter how much one stretched it, within half an hour would be as small as before. An attempt to get the gauze in failed, because the cervix contracted so tightly. I then slit it far enough up to enable me to get into the uterus without difficulty. I admit that this procedure is likely to be followed by a deformity. That is, if the woman subsequently become pregnant, there will be a possibility of the child being born two or three weeks before term. Up to that time the internal os guards the entrance to the uterus. So far as hemorrhage is concerned, a pair of hemostatic forceps will control it perfectly.

THE PRESIDENT.—Dr. Wylie objects to speaking of this instrument as a stem pessary. The term pessary is added because a pessary is used to hold the stem in place. I recommend it simply for use in the place of the one of Dr. Thomas, which is so difficult to apply. This rubber cord will keep sweet for six weeks. I know that to be true, for I have patients who have worn it that long. With reference to divulsion and subsequent contraction, I may say that one of the patients to whom I referred was sterile; she had a marked anteflexion, which I believe was the cause of the sterility. I divulsed the cervix up to No. 25 American scale a year ago, put in the plug which Dr. Wylie recommends, and left it in a week. The patient returned home, and wore the stem a few weeks longer. This autumn I found the anteflexion as bad as it had ever been, with as much contraction at the internal os. I requested her to consult a distinguished gynecologist of this city without telling him why she did so. He advised divulsion, for the cervix had the appearance of never having been divulsed. The operation was repeated, and the instrument which I have just presented was introduced, the stem being of glass. She has worn it now for three weeks without any distress. The uterus is no longer anteflexed, although it might become so if the instrument were left out.

DR. SKENE.—This pessary has always been known under the name stem pessary, and I see no reason why, as long as it is used, the term should be changed. Although we know that under certain circumstances it is an exceedingly dangerous instrument, yet I can imagine conditions in which it would be useful, and, in fact, accomplish the object as nothing else would. I know quite well that the glass stem and the Thomas cup are not easily brought together for use, but I am inclined to think, Mr. President, that while you have overcome the mechanical difficulty in this respect, there is still an objection to your method which does not apply to the stem and cup. In cases in which I have used this form of pessary, I have found that an important object to be accomplished was to have the stem, and the pessary which supported it, move independently of each other. As soon as you place restraint upon one end of the stem, that constantly moving organ, the uterus, will cause pressure upon it and do harm. I have seen no instrument in which the movements of the stem and of its support were as independent of each other as in the Thomas pessary. In this, if there be a perfectly smooth flange on the stem and a perfectly smooth cup, you have a perfect ball-and-socket joint, and the uterus may undergo various movements without making any pressure upon the stem. I am as much afraid of the instrument as anybody, yet I think it is hardly fair to discard it

entirely because dangerous, for there are cases in which its use is almost imperative. As to drainage, that is another question, and I do not suppose it belongs to this discussion.

DR. CLEMENT CLEVELAND.—Some months ago I showed to the Society a glass stem, perforated about an inch from the end, which I had devised for keeping the os open after trachelorrhaphy where it was necessary to amputate both the anterior and posterior lips. The stem was fastened by sewing through the perforation. Dr. Tuttle told me he has been using this stem in place of the ordinary stem in cases of antelexion, with satisfactory results. With it the uterus is quite at liberty to describe its normal movements.

DR. BUCKMASTER.—According to Schultze's views regarding the normal position of the uterus, which are now receiving almost universal credence in Germany, a glass or hard-rubber stem would not be in order. He believes, as all present know, that antelexion is due to contraction of the utero-sacral ligaments, and that the normal position of the uterus when the bladder is empty is in antelexion. Therefore any stiff stem would prevent the uterus from returning to its normal position, and would cause trouble. The only stem which would be permissible, according to that view, would be one with a joint, which would permit the uterus to fall forward.

DR. WYLIE repeated the view that the only benefit derived from the stem pessary, aside from effecting drainage, was the effect of its presence on the mucous membrane. This could be better obtained by safer means. As to its use for straightening the uterus, it was too dangerous, especially when worn a long time, and should therefore be discarded.

ESCAPE OF A LIGATURE BY ULCERATION THROUGH THE ABDOMINAL WALL.

DR. POLK.—The specimen presented is not extraordinary in itself. It is a ligature which had been passed about the round ligament in a case of hysterorrhaphy last October, and which ulcerated its way through the abdominal wall, coming out at about the end of the third month. It was returned to me by the patient. Her condition at the time of the operation had not been very good, although she stood it pretty well. But I had the misfortune to use the Hagedorn needle. I say misfortune, for I have rarely used it without pus forming along the line of suture. In this case I used the Hagedorn needle not only in passing the ligature, but also in closing the abdominal wound. There was suppuration along the line of sutures, and the suppuration doubtless extended down to the ligature, which accounted for its discharge.

In this connection I may say that to me the whole question of shortening the round ligaments is an interesting one. The operation which I did in this case, and have done at other times, is virtually that of hysterorrhaphy. I will say this, however, that the sutures were not passed in direct relation with the cornua of the uterus, as has been suggested by Kelly, Sängner, and others, for the simple reason that the pelvis, being of the male rather than of the female type, was so deep that the uterus could not be

brought in apposition with the abdominal wall even as low down as the symphysis. Therefore I selected a point to pass my sutures about an inch and a half distant from the uterus on either side. At this point the ligament could be readily caught and fastened to the abdominal wall. That also accomplishes the object of holding up the prolapsed ovary, if desired, or the procedure can be resorted to for the single purpose of holding up the prolapsed ovary.

This question, of course, infringes somewhat upon the procedure which Dr. Wylie has introduced—a very excellent one, as all must recognize, and I hope Dr. Wylie will not think for a moment, from what I am about to say, that I in any way claim priority in connection with the procedure, for I do not. The operation which Dr. Wylie has suggested is that of shortening the round ligaments inside the abdominal cavity for the purpose of holding the uterus forward. When I was working at this subject, I tried a good many different things, among which was to stitch the fimbriated end of the tube to the abdominal wound; and although I succeeded in a few cases, yet it did not amount to much, and I abandoned it.

This led me to investigate the procedure which Dr. Wylie has brought forward. I tried it in the post-mortem room, and found that it had no advantage over hysterorrhaphy, if you do not confine yourself, as has been advocated in hysterorrhaphy, to the cornua of the uterus. In other words, if you allow yourself to take any part of the round ligament, you choose to stitch to the anterior abdominal wall. Take a case in which the fundus cannot be brought in apposition with the abdominal wall. You can pass your ligature about the round ligament near its centre, and stitch to the anterior abdominal wall, and get as good or better results than by shortening the round ligaments within the abdomen. The point is this: that for the purpose of tilting the uterus forward hysterorrhaphy is really superior to any other operation, if one is willing to open the abdomen. Alexander's operation will hold its own in any case in which the uterus is sufficiently movable to be readily lifted. But in cases in which the abdomen has to be opened, I believe hysterorrhaphy offers advantages over any method of shortening the round ligaments, either within or without the abdominal cavity.

DR. WYLIE.—With regard to this suture, I would simply say that, like many others, it had become septic either before or after putting it in, and found its way out. Sometimes such sutures kill the patient before finding their way out. Especially where tying diseased tubes or tissue which contains septic material, the ligatures are apt to become septic, even though before use they were perfectly clean. When the ligature once becomes septic, it acts as a foreign body and must find its way out somewhere.

With regard to the operation of shortening the round ligament, I began the method of shortening it from the inside about four

years ago. I never liked the idea of sewing the uterus to the abdominal wall. Dr. Sims suggested it many years ago, although he did not practise it. It seemed to me not to be the proper thing to do; there seemed to be something too abnormal about it. This other method occurred to me in this way: Sometimes, when operating for the removal of the diseased tubes and ovaries, I would find the uterus retroverted and adherent. The other tissues were relaxed, and I could easily pick up the round ligaments, and when lifted or shortened the uterus would not fall back. I then practised this procedure deliberately in two cases, one of which was in a patient seen by Dr. Skene. The patient lived on Long Island, and came to me with a note from Dr. Skene. She had complete retroversion and some adhesions. I opened the belly as the best way to break up the adhesions. I did break them up and shortened the round ligaments, and to-day the woman's uterus is in perfect position. Before the operation she was practically bed-ridden.

But I do not think we should resort to this operation, or any other formidable operation, simply to put the uterus in what we believe to be the normal position. If the uterus is healthy, the position does not matter so much. But this procedure is certainly simpler than any in which the uterine walls are involved. By doubling the ligaments, it has been my experience that the uterus can be almost perfectly held in position, especially in those cases in which there is great relaxation. Except in one case where the woman was allowed to become constipated and the uterus tilted over to the left side, the position after the operation has been almost perfect in all cases, so far as holding the organ forward is concerned. Of course I do the operation carefully: take up a loop of half an inch or an inch, or, in some cases, an inch and a half, shortening it to any degree. It simply holds the uterus forward over the bladder. By including a little more tissue in the suture than the tube, I think the uterus can be held up more perfectly. It is certainly better than Alexander's operation. I have never tried sewing the tube to the abdominal wall. I should think the objection to it would be the same as that to sewing the uterus itself to the anterior abdominal wall, that is, danger of the intestine becoming caught. Then I think the uterus should retain its mobility as well as its normal position. In fact, I think more of mobility than of normal position.

DR. BOLDT.—Did I understand Dr. Polk correctly that he has usually found suppuration along the line of suture after the use of the Hagedorn needle?

DR. POLK.—Yes, sir; I must confess that has been my experience, and I have abandoned the Hagedorn needle.

Being further asked by Dr. Boldt whether he could explain it, he said he could not. Replying to Dr. Wylie, he said he did not use the forceps with the needle. He had no trouble inside the abdomen, no peritonitis. The needle had been passed through the flame, and the same care as to antiseptics observed with regard to the suture, etc., as in other cases.

DR. BUCKMASTER.—I would like to hear from Dr. Skene, who has been making some investigations with regard to silk.

DR. SKENE.—I can simply say that I can hardly see any good reason why the needle referred to by Dr. Polk should be at fault. Yet the opinion of Dr. Polk is sufficient. The question of the silk being antiseptic, and behaving well if it is antiseptic when used.

I think depends entirely upon the method of preparing it. To simply sterilize silk by heat or other methods, and then saturate it with, say, a solution of bichloride of mercury, does not, in my opinion, render it safe. It is aseptic when used, but the little aseptic matter which it contains soon gets washed out or soaks into the tissues. If then the wound remain clean, the silk will not prove septic; but if there be any filth deposit or suppuration of the tissues about, I see no reason why the silk suture or ligature should not become septic, cause suppuration, and find its way out as in Dr. Polk's case. It depends entirely upon the silk remaining aseptic, and that it will only do if properly prepared.

THE PRESIDENT.—I feel very sure the Hagedorn needle is not at fault. It ought to make a clean wound. Those who attend these meetings regularly will remember that about three months ago we discussed the subject of sutures. We found there were a great many mural abscesses in quite a number of hospitals, but certainly not due to the Hagedorn needle, because the Hagedorn needle was very little used in sewing up abdominal wounds. At the Woman's Hospital for the past two months I have used the Hanks-Hagedorn-Peaslee needle. It is the Peaslee needle, except that it is ground at the point like the Hagedorn, and the eye is passed through laterally instead of antero-posteriorly. Dr. Lee and I have used it constantly for two months and have had no suppuration.

I would inquire whether or not the wet bichloride dressing the first two days is not better than dry iodoform. For the past two months I have used the wet bichloride dressing during the first two days, keeping a rubber tissue over the dressing so as to retain the moisture, and there has been no suppuration. As just stated, two months ago we were searching for what caused our mural abscesses, and I concluded that I would do very differently from what I had been doing. I have had no abscesses since. I have succeeded better because more certain of using only aseptic materials.

DR. SKENE.—I do not believe that by the use of iodoform, either in gauze or as a powder, you could be at all sure of avoiding suppuration. I have found, and I believe it is the testimony of bacteriologists also, that iodoform is about the mildest kind of germicide. A number of germs seem to live and thrive in it. Then the powder is often diluted by being dusted into gauze, and, furthermore, there may be wax or oil about the material which prevents it from absorbing the serous exudation. Really, I should expect suppuration if I dressed the abdominal wound with iodoform gauze. I should certainly look for it. I have had no experience with gauze saturated with bichloride, but the dressing which I have employed for years, having obtained it from Mr. Keith, is composed of one part of carbolic acid and eight parts of glycerin, the gauze being thoroughly saturated with it, wrung out dry, and placed over the wound; that protects the wound and absorbs all blood and serum. So strong a solution of carbolic acid would be destructive to the tissues if they were not protected by the other antiseptic, glycerin. If I ever have suppuration in the wound, I know it is due to some abuse in the operation, not to the dressing. If my wound is clean and the sutures clean, I can depend on that dressing every time.

DR. POLK.—I simply wish to say, with regard to the possibility of these ligatures being septic, that, of course, we all know the

liability to sepsis, and we must be constantly on our guard against it. But that which impressed me was that this same suture material, used to ligate the stump of the ovarian tumor or of the stump in Tait's operation, should be dropped into the abdominal cavity with impunity, not a single inflammatory reaction following, yet when used with the Hagedorn needle in closing the abdominal wound there should on the fourth day be evidence of pus. Under these circumstances, it occurred to me there might be something in the form of injury which the Hagedorn inflicted on the tissues. Of course it means sepsis if there is suppuration, but I think the Hagedorn is more likely to be followed by it than other suture needles.

DR. WYLIE.—With reference to suppuration along the sutures in the abdominal wound, I would say that Dr. Tuttle has told me that in the Roosevelt Hospital for some time past they have been using ordinary potash soap to cleanse the abdominal wall before incision, and since adopting that practice they have not had any case of suppuration. It seems to me the real cause of suppuration is not in the form of the needle, but in not getting the skin perfectly clean, and in not applying the dressing in a way to keep out germs and prevent sepsis. As to iodoform, I have used it for so long a time, and have had such perfect success, sometimes running as high as seventy-nine cases without a death or even an abscess, that I do not like to drop it. It certainly does no harm. The method of squeezing gauze out of a solution of bichloride I have followed many times, but it is necessary to wring it rather dry, else in many cases it will irritate the skin, and even cause an eruption.

DR. A. J. C. SKENE read a paper entitled

FIBRO-CYSTOMA OF THE UTERUS.

The patient was unmarried, large and strong, and had enjoyed excellent health until she was thirty-six years old. At that time, three years before I first saw her, she began to have pelvic tenesmus and pains of an ill-defined character. These did not interfere with her duties, which were numerous, and taxing to mind and body. Menstruation was regular and normal in every respect, and always had been so. Less than a year before the writing of this history, she noticed the abdomen enlarging, and during that time she lost flesh. She also had attacks of severe abdominal pain, some of them inflammatory, perhaps, but mostly neuralgic, from pressure disturbing the circulation.

When first examined, there was a tumor in the abdomen about the size of the uterus at the eighth month of gestation. The upper portion of it was smooth and well defined, and there was distinct fluctuation, showing that more than half of the tumor was cystic. The lower portion was solid and irregular and slightly nodulated. There were no signs of adhesions at the upper portion of the tumor, but it was fixed below, but whether from adhesions or its pelvic attachments was not clearly made out. By the vaginal touch the dependent portion of the tumor was found well down in the sac of Douglas, and was quite solid. The uterus was crowded forwards

and upwards; it was not enlarged and could be moved laterally sufficiently to show that its body and cervix were not attached to the tumor. The fundus uteri could not be detected. The history and physical signs quite satisfied me that the tumor was ovarian. In this diagnosis several of my friends coincided, but an active doubt was entertained regarding the true character of the tumor. It was presumed that it might be either a cystoma with a rare amount of fibrous tissue, an intraligamentous tumor with large masses of papillary growths, or a dermoid cyst. The thought also occurred to me that it might be a fibroma of the uterus, with an ovarian cyst, but the close association of the solid and fluid portions of the whole mass, and the size of the uterus, excluded that suspicion. Suffice it to say that the true character of the case was not made out until the operation.

Operation.—Incision three inches in length having been made, and the tumor found to be solid at lower part, as diagnosed, the incision was enlarged to beyond the umbilicus. A trocar was then introduced into the upper part of the tumor and eight pints of fluid were evacuated. The mass was then turned out, bringing with it a coil of small intestine and the uterus, the tumor hanging from the top of the fundus by a very short pedicle. A wire clamp was fixed on the pedicle, but this cut through the peritoneum, causing considerable hemorrhage. A smaller clamp was then fixed and the attachment to the uterus divided. The adhesions to the intestine were then ligated and separated; they were firm, close, and very vascular. The left ovary, being diseased, was removed. A small pedunculated fibroid on the right side of the uterus was also removed. The right ovary was healthy. The stump fixed in the clamp was brought to the lower angle of the wound, and the wound was closed with fourteen deep silk sutures. Time of operation, fifty-six minutes.

Patient reacted well, and in the evening was so comfortable that the dressing around the stump was not touched. Next morning, on examining the case, I found from the dressing that there had been some slight hemorrhage, and to my surprise found the clamp lying empty, the stump having completely disappeared into the abdominal cavity and the wound quite closed over it. As there was not the slightest sign of internal hemorrhage, I decided to let well enough alone. All necessary preparations for opening the wound and recovering the stump, in case of hemorrhage, were made, and the patient most carefully watched, but there was no trouble of any kind. According to the usual rule, the wound healed by first intention, and the patient returned to her home in less than a month after the operation.

This is the first experience I have had of the stump escaping from the clamp, and I can only look upon it as an exceedingly interesting and, in this case, fortunate accident. It also helps to confirm an opinion I have long entertained, viz., that instead of

following a rigid rule of treating the stump by the intra- or extra-peritoneal methods, it is well and better to adopt the method best suited to each case. I am satisfied that in this case I might have treated the stump by ligature and returned it into the abdominal cavity.

Prof. Frank Ferguson and his associate, Dr. Belcher, reported upon the pathology as follows: The tumor is a flattened ovoid, weighing eighty-two ounces, with a greater circumferential measurement of twenty-eight inches. Its consistence is hard and firm. The exterior of the tumor is rather smooth and covered throughout nearly its entire extent with what seems to be peritoneum. One-half of the tumor is solid and the other half is cystic, the largest cyst having a capacity of three quarts. This cyst communicates with numerous small cysts; their interior is rough and shreddy, and they contained altogether over a quart of a reddish-brown fluid, rich in albumin and under the microscope showing many red blood cells.

Microscopically the tumor is composed largely of fibrous tissue with numerous non-striated muscular bundles. In the neighborhood of the cyst there are numerous spindle and branching cells resembling mucous cells, but they are in a stroma of fibrous tissue and are regarded as the ordinary connective-tissue cells. The walls of the cyst have no cellular lining, and in their etiology they are regarded as degenerative, and the fluid which they contain could be readily obtained from the rich supply of blood in the wall of the cyst.

There are several questions, based upon the brief history of this case, which may be raised for discussion.

First of all, in regard to diagnosis, was the mistake in this case unavoidable, owing to the nature of the history and physical signs, or would a larger experience enable me to be more accurate? It is admitted by the highest authorities that a fibroid may be mistaken for a fibro-cyst, owing to varying degrees of density in different parts of the tumor, distention of the uterine cavity with menstrual fluid, or masses of distended veins; but I infer that the distinction of a fibro-cyst of the uterus and an ovarian tumor is considered by authorities to be easy and certain. Nevertheless, a careful following of the rules for diagnosis in abdominal tumors was unreliable in my case.

The pathology and anatomy of this tumor suggest to my mind that it may be a true uterine fibro-cyst. At least it appears to be more of that character than any tumor I have ever seen. If such be the case, a new explanation of its genesis must be sought for, and I will venture to give my own impressions on the subject.

In order to make this as clear as possible, I may state the facts already quite familiar to you, viz., that the cyst-like formations usually found in uterine fibroids are said to be developed either by softening and disintegration of portions of the tumor.

which give rise to intramuscular cyst-like spaces with no appearance of their having cyst walls, or by edema and softening of the infiltrated tissue in circumscribed portions of the tumor; or to be due to hemorrhages and breaking-down of the blood clot.

I submit that this specimen does not appear to have any such origin. The location of the cyst is between the fibroid and its capsule; there is no indication of the solid tumor having broken down to an extent sufficient to supply four quarts of *débris*; there were no broken-down tissues found in the fluid, neither was the fluid a simple transudation. The character and quantity of the fluid and the pressure of the cyst wall oppose the theory of edema or transudation. Again, there is an appearance of a cyst wall, though not well defined, indicative of being capable of secreting the fluid in this cyst.

Assuming that the recognized theories of the genesis of fibro-cysts of the uterus do not satisfactorily account for this case, I offer the following opinion regarding the pathology of the case in question, and I do so with the desire to call forth discussion, and not as a contribution to definite pathology.

That the cyst is formed from the transformation of a blood vessel or vessels. This theory would explain all or most of the facts regarding these cysts in a more satisfactory manner than any of the theories given in our literature. This idea of the genesis of cyst formation is not new. A distinguished Fellow of this Society, Dr. Noeggerath, claimed that certain ovarian cysts were developed from blood vessels, and gave a large number of microscopical investigations in support of his view. I am satisfied that a similar origin may be rationally claimed for the development of this uterine fibro-cyst, but I hope to hear the views of the Fellows present, which may confirm or refute this theory.

That there is room for discussion no one will doubt, and that it would be profitable if some definite conclusions could be reached is equally apparent. There is also room for hope that by extending investigations in this department of pathology other and equally important subjects may be made more clear and accurate. It has been said that gynecologists in general were not profound pathologists. This is indicated by the fact that they often and on many questions differ among themselves. However, it appears to me that within a few years much progress has been made. For example, a great many of the inflammations of the pelvic organs have been more definitely located, and in many of these the cause has been traced to the many forms of non-specific or specific sepsis. The genesis, history, and histology of neoplasms have been clearly defined in the majority of cases, and if more insight could be obtained regarding the inflammatory affections which are not due to sepsis, but produce certain degenerations of the organs involved, much would be gained.

The practical utility of a knowledge of the true pathology of

fibro-cysts of the uterus is that it may guide to a more rational treatment, and that appears to be much needed at the present time. The diversity of opinion regarding the treatment of fibroma and fibro-cystoma is perhaps due to the fact that the location, conditions, and complications of such uterine neoplasms call for different kinds of treatment, and the advocates of the various methods might more wisely elect the proper treatment in given cases if more reliable experience were obtained regarding the adaptation of certain means to the different morbid states.

In reply to Dr. Wylie, the reader of the paper said the diameter of the pedicle of the tumor was not greater than an inch. It was short, yet it allowed perfect mobility of the uterus while the tumor remained at rest. In reply to a question by the President, he said the tumor was a subperitoneal, pedunculated fibro-cyst, removed from the fundus of the uterus.

DR. JANVRIN.—This case reminds me very forcibly of one in which I assisted Dr. Peaslee fourteen or fifteen years ago. The patient, a maiden lady of about thirty-five, had a large tumor which Dr. Peaslee diagnosed as an ovarian cyst, probably a monocyst. Dr. Emmet, Dr. Trask of Astoria, and I assisted him at the operation, which was performed in Astoria. He first tapped the tumor, after opening the abdomen, and then turned it out, when it was found to be a large fibro-cyst, attached, exactly as the one in Dr. Skene's case, to the fundus of the uterus: the womb being of normal size, and the stump of the tumor being about an inch and a half in length by about an inch and a quarter in diameter. The stump was transfixed through the centre by the Peaslee needle, a very strong silk ligature passed through and tied on either side, the ligatures, of course, interlocking as usual; the uterus was returned to the abdominal cavity and the abdominal wound closed. The patient made a perfect recovery, and is living at the present time, in perfect health. It was a case in which it was impossible to diagnose the condition from an ordinary monocystic ovarian tumor, and of course was supposed to be such.

The dropping-back of the pedicle within twenty-four hours, and the non-appearance of hemorrhage, remind me of a method which Dr. Peaslee applied sixteen or seventeen years ago to the treatment of ovarian pedicles. It consisted in the use of a small, flattened silver canula about the length of the finger, with a hilt at one end, with perforations running lengthwise of the canula large enough to pass silk ligatures through, with which the transfixed pedicle was ligated. The upper half of the canula was held in the lower end of the abdominal wound. At the end of forty-eight hours, a small knife, perfectly adapted to the interior of the canula, was passed down and the ligatures cut; then, on withdrawing the canula from its position, the silk ligatures came with it, leaving the pedicle perfectly clean. I remember quite well removing a number of the canulae with the ligatures, which was always done at about the forty-eighth hour. The reason for Dr. Peaslee's not leaving the canula in longer was this: Some years prior, Dr. Speir, of Brooklyn, had demonstrated by experiments upon animals that forty-eight hours was all the time required for ligatures to remain without hemorrhage taking place on their

removal. Following up these conclusions of Dr. Speir's, Dr. Peaslee made use of them, as before mentioned, in the treatment of the pedicle of ovarian tumors.

DR. WYLIE having asked whether Dr. Skene had used transfixing needles in the stump above the clamp, Dr. Skene said he had not in this case. It was the only time he had ever left a pedicle of that kind of tissue in the clamp without doing so. He would not do it again.

DR. WYLIE.—I cannot say that I have ever seen a tumor just like this one. My experience with fibro-cystic tumors has included two kinds, the one where the cyst was in the centre, and the other in which there were a number of small cysts in a very vascular tumor. To the latter, it seems to me, Dr. Skene's idea regarding the origin of these tumors might be more applicable. I removed one no less than sixteen inches in diameter, weighing sixty pounds, which was so vascular that when I lifted it out of the abdomen, and before I tied it, I was yet uncertain whether I had a cyst or a large solid tumor, or at least a fibro-cystic tumor. Dr. Polk, who was present, will remember that I put in a large trocar and got nothing but blood. But when the tumor was examined afterwards, it was found to contain a number of small cysts, holding from a drachm to three ounces of yellowish fluid. They were numerous, just as might be expected if due to a change in the arteries.

I think the doctor is perfectly right with regard to tying the pedicle. I think there are cases in which a great deal of trouble would be avoided by tying and dropping back. My rule has been, where the pedicle contained very little muscular or fibrous tissue, not to hesitate to tie the stump and drop it back. But if there is much muscular and fibrous tissue, I think it is better to use a clamp which will screw up. I leave the clamp outside the dressing, where an assistant, who watches it very carefully, can tell by turning it up, and without looking at the stump, whether it is tight enough. Every few hours he turns the écraseur, and if it is not tight enough he makes it tight. I have found this necessary, because after muscular or fibrous tissue has been tied it undergoes a change, shrinks, the ligature becomes quite loose and is liable to slip. That is the reason why I have not been willing to tie muscular or solid tissue and drop it back. I have, in all cases excepting one, used the pin, and I believe that without the pin, where there is much traction on the stump, it would slip through the clamp. It is very important to have the clamp watched and tightened from hour to hour, if it get loose.

DR. POLK.—The questions raised by Dr. Skene, all must agree, are very interesting. With regard to diagnosis, it appears to me that without an exploratory incision, unless the woman had very thin abdominal walls, it would be almost impossible to make the diagnosis in such a case. As to pathology, I should like to ask Dr. Skene whether this tumor was more a myoma than a fibroma. The mass seems now to contain more myomatous than fibromatous tissue.

DR. SKENE.—Myo-fibromata, I should think, would be more nearly the right name for it; yet my opinion is not very reliable, since I have not examined it with care in regard to its histology.

DR. POLK.—Those cases in which the muscular tissue predominates are more rapid in their growth than the others, and consequently have a much greater blood supply. The fact of its being

pedunculated would show that its nutrition must have been seriously suffering. This change, as the pathologists tell us, is degenerative, and was especially marked in this case. But the question arises, Was the change due to hemorrhages in the tissue or to other conditions? There is no question that these cysts may arise from blood vessels when they are undergoing degenerative changes, and it occurred to me that very careful examination of the lining of the cysts might throw some light on that question.

With regard to treatment, it seems to me Dr. Skene's remarks, implying that no one method can yet be decided upon as invariably the best, will generally be accepted. I am a little surprised to hear Dr. Wylie lay so much stress on pins. Now, the accident which occurred in Dr. Skene's case is just what should be sought for intentionally in many cases. I do not mean that the pedicle should always be dropped into the abdominal cavity. That, as Dr. Wylie has indicated, depends largely upon the kind of tissue one has to deal with. I do not believe there is any necessity for pins, nor do I believe there is any necessity for those ligatures which produce large masses of necrotic tissue upon stumps. The period of convalescence is thereby much prolonged on account of the sloughing which takes place either from the rubber ligature or the clamp, and the dragging upon the pin is often very annoying. I would like to ask Dr. Wylie a question—which, however, may be out of place—viz., Does he not think that in the case he operated upon there was too much tension on the stump?

DR. WYLIE.—Yes, but it could not be avoided. The broad ligaments were so diseased that I did not dare to drop them back.

DR. POLK.—I spoke of the uterine stump as it was after you had cut off the growth. In some four cases the plan which I adopted was this: I found that I could not take out the entire mass, as Dr. Stimson has recently suggested, nor could I follow the plan of Dr. Dudley—a modification of Schroeder's—so I cut off the tumor, stitched the peritoneum of the growth to the abdominal wall, cut out the stump, put in a piece of iodoform gauze, and closed the abdominal wound over it. I had ligated the uterine artery with a piece of aseptic silk before amputating the stump. The ligature effectually prevented hemorrhage. The result was that at the end of four weeks the patient was able to be up. I had none of that sloughing mass usually seen. By passing the sutures in such a way as to include, not simply the peritoneum, but the fascia of the rectus muscle and a portion of the uterine tissue as well, there is not the slightest danger of the ligature cutting out. In the first place, you can regulate the amount of strain, because you can cut off the uterus at the point you choose, and thus you need have none of that traction which I look upon as the cause of a fatal result in many cases where the clamp is employed. The broad ligaments can be ligated and dropped back, so that traction through their presence in the stump does not come up for consideration. It is simply a question of traction on the remains of the uterus and its immediate vaginal connections. You get rid of the strain and shock which are the invariable accompaniments of the other procedure. I suggest this plan as one of the alternatives to be adopted under certain circumstances. I do believe we can get rid of the pins and ligature, which create a large mass of necrotic tissue.

DR. MUNDÉ.—The method of dropping back the stump is certainly the ideal one, but it is also certainly not perfect in its re-

sults. I think the safest method is that adopted by Dr. Polk, or a modification of it. Two or three years ago, I saw Billroth perform a similar operation, but I never heard the result. There were repeated profuse hemorrhages from the stump, which were checked by tying artery after artery, and finally by sewing the stump to the abdominal wound. I have had seven cases of abdominal hysterectomy for fibroids, five of which recovered, and of the other two one died of shock attending secondary hemorrhage from a rupture of the adherent mesentery, and the other of suppression of urine. These fatal cases can therefore not be counted when speaking of the results of treatment of the pedicle. In my first two cases I used pins and steel wire, which was tightened until the stump dropped off after twelve or fifteen days. In three cases I used the elastic ligature with the pins. I do not know what I should have done without the pins, for I should have feared slipping of the ligature without them. It is true, they render the patient somewhat uncomfortable. I should not wish to place myself on record as in favor of omitting the pins and thus of running the risk of slipping of the elastic ligature, nor do I desire to be quoted as wishing to cease using the elastic ligature. Indeed, I like the elastic ligature better than anything else. On Wednesday last I operated on a case, using the elastic ligature and pins, sewing the peritoneum around the pedicle below the ligature, and the patient has had no rise of temperature. The pedicle is necrotic, but what of that? The pins are only an inconvenience. There is no hemorrhage and no sepsis. If one could do Polk's method it would be better, but there are cases in which it cannot be practised.

As to diagnosis, I do not believe anybody can always or usually diagnosticate a fibro-cyst of the uterus without first opening the abdomen. I have had two cases, one of which I took for a multilocular ovarian tumor. The uterus was behind, and at the operation the tumor was found to be attached to the fundus by a small pedicle. The other also appeared to be a multilocular ovarian cyst, but proved to be a soft myoma.

DR. A. P. DUDLEY.—Although I may be the youngest operator of those who have spoken, I shall stand for dropping the pedicle back every time where it can be done. I consider this the better method of operating, although Bantock, when he was here, told us that he has had better success with the other form. Anybody, however, can have success when he can choose his cases. I do not believe any fibroid can be so spread out that it cannot be enucleated with some hope of success, if we operate in such a way as to close the peritoneum over the stump. By that method I believe that in eight cases out of ten we give the patient a better chance of recovery, and cause her less pain and deformity. Of six cases which I have operated upon I have lost three, and in those three the stump was extra-peritoneal. I used the clamp and the pins, and stitched the peritoneum to the abdominal wall around the stump carefully, and I felt quite sure that the operation was made as nearly antiseptic as could be done. Still, an accident happened in each of the three cases, and the patient died. In the other three I dropped the pedicle. The growth was large and had extended down to the internal os. In one I was obliged to enlarge the incision to two inches and a half above the navel, in order to get the tumor out of the abdominal cavity. It weighed twelve pounds. The pedicle was broad. I enucleated it from the broad ligaments, quilted them down to the tumor, cut them off and dropped

them; I then enucleated the tumor from the cervix, after having stripped off the outer layer all around; left only about half the cervix, transfixed this with silk or catgut inside the portion I had stripped off, and covered it with the peritoneum. Thus I had an absolutely clean abdominal cavity, with only a line of catgut sutures running from one broad ligament to the other. There was no raw surface in the abdominal cavity. On the third day I dilated the cervix, and let out what discharge had taken place. The temperature did not rise above 100° F. in any one of the three cases. In the future, I shall treat no case by the extra-peritoneal method if I can do it in the way just described. Speaking of hemorrhage, I do not know why we should have so much fear of hemorrhage when treating the broad ligament in that way. quilting it down, and especially if we also ligate the uterine artery. If hemorrhage does take place, it will be below the peritoneal cavity and the blood will make its way out through the cervix. I shall stand as an advocate of the intra-peritoneal method.

DR. WYLIE.—I would like to say this: We are too apt to be governed by our own limited experience. I had a run of nine successive cases treated successfully by the extra-peritoneal method, and I did not care to change. But I am not wedded to any one method. Different methods are suited to different cases.

THE PRESIDENT.—I should like to ask Dr. Skene if he does not believe that in a pedunculated myo-fibroma of this character, which has existed two or three years, the moment the clamp is put on and tightened the fibrous structure would separate and leave only a pedicle of peritoneum and vessels. It seems to me that is what happened here, and it is what happened in two cases of pedunculated fibroids which I have removed. In those two cases I believed that a very strong ligature was required, and in tightening it I felt that I was pushing the fibroid growth from the uterus, and that only peritoneum and vessels remained in the ligature. There was no hemorrhage. The stump was dropped in and the patients made an uninterrupted recovery.

DR. SKENE.—Briefly, I would say, as to that, that the pedicle usually holds in its capsule fibroid tissue. If you put your clamp low down on a short pedicle, where the fibrous tissue and the uterus come near each other, I think that happens which the President has stated, that you simply include in the stump the capsule of the tumor, not any portion of the tumor itself or uterus. If the pedicle were simply composed of capsule, I should certainly do what the President has suggested. But if the muscular tissue of the uterus and tumor came close to each other, I should be very careful about enucleating, for if hemorrhage took place I do not know how it could be controlled, except by ligating the vessels down in the uterus. I know you may stitch and sew, but the stitches will break out and you will get secondary hemorrhage.

The discussion has been so thoroughly on my side that I have little to add. Certainly, if I used the clamp—even the wire clamp, as I did in this case—I should put in the pins, especially if there was much pedicle, because the central portion will drop unless pins are used. I should not have used the clamp if I had felt sure that I could have possibly avoided it. Yet I might have avoided it in this case, as the after-history shows. But our best judgment does not always come to us at the time of operating. I would use

the pins in that way when I found the clamp necessary and the pedicle was thick.

I have nothing to object to except what has been said by Dr. Dudley. I would not be so positive as he is in the selection of the method of operating, by any means. The records show that the extra-peritoneal method gives the best results, although the intra-peritoneal method would seem to be most in keeping with what are regarded as good surgical principles. The intra-peritoneal method saves time in recovery, but I do not think we should abandon the extra-peritoneal method in suitable cases.

DR. DUDLEY.—I should agree with Dr. Skene if it were not that the stump, in the operation I speak of, is extra-peritoneal; the stump is below and outside the peritoneum.

DR. SKENE thought Dr. Dudley's explanation made a distinction without a difference. He understood that usually in the intra-peritoneal method an effort was made to cover the stump by the peritoneum, and in that sense make it subperitoneal. Yet it was what was regarded as the intra-peritoneal method.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

Friday, June 7th, 1889.

The President, DR. THEOPHILUS PARVIN, in the Chair.

DR. WM. GOODELL reported the following history of

A CASE OF EXTRA-UTERINE FETATION,

and exhibited the specimen:

The patient had been married for a number of years without conceiving. Her catamenia had been regular up to the time when they ceased for nearly seven weeks and morning sickness set in. The next monthly period was free for a few hours and then merely a show of blood which lasted several days. During this dribble severe intercostal pains, lasting two hours, followed a movement of the bowels. For several days there was great soreness of all the muscles. At irregular intervals these intercostal pains reappeared and were always followed by much muscular soreness. There were few pelvic pains, nothing like cramps, and Dr. Goodell was called in on account of a continuous dribble of blood which had lasted for three weeks. During this metrostaxis membranes were twice passed, which were supposed to be fragments of an early miscarriage. Dr. Goodell found an irregular tumor to the left of the womb, closely adhering to it and pushing the fundus over to the right.

In view of the history, a diagnosis of extra-uterine fetation was made, and the operation was promptly performed three months

after the cessation of the last regular monthly period. There was no appearance of old or of fresh blood in the abdominal cavity, such as is usual in many of these cases when rupture has taken place. But of course blood escaped during the breaking-up of numerous adhesions to the rectum and the broad ligament. The specimen shows the left ovary and the corresponding tube greatly enlarged by a deposit of placental tissue. Dr. Osler, who was kind enough to examine the specimen for me, states that the chorion villi are unmistakably present. No fetus was discovered, but it may have perished and become absorbed, or it is possible that it may have escaped into the abdominal cavity through an opening made accidentally into the sac during the process of enucleation. So vascular was the sac that a stream of blood spurted out from this tear as if it came from a large vessel. Apart from a nervous attack of vomiting, which lasted nearly twenty-four hours, the convalescence was uninterrupted.

DR. J. PRICE.—I am satisfied that Dr. Goodell's explanation of the absence of the fetus is correct. I could cite two or three cases and an experience of my own which support this view. Mr. Tait's first two cases made tedious recoveries, and in both he failed to find the fetus. Some time ago I did a section with a doubtful diagnosis. Some one standing by asked me what I expected to find. I replied, "One of twelve things." I went on and removed a large adherent tube, ruptured, with the abdomen pretty well filled with clot. I then irrigated the abdomen. After using one pitcher, the water returned perfectly clear. To make the toilet thoroughly satisfactory, I used the second pitcher of water, and, in finishing the second toilet, washed out a little boy. In this case I am satisfied that the peritoneum could have taken care of the fetus by digestion, as probably occurred in Mr. Tait's cases.

DR. HOWARD A. KELLY.—I think that this case illustrates how readily we can make a satisfactory diagnosis, given symptoms being present. With a certain order of symptoms and signs, we can with the utmost certainty diagnose extra-uterine pregnancy in a certain proportion of cases. In another large proportion of cases, it is a matter of mere conjecture until the abdomen is opened. I operated this week on such a problematical case, one of the two possibilities being extra-uterine pregnancy. Such proved to be the condition, although no fetus was found. I found the sac and the placenta within the ruptured tube.

In a recent book on this subject by Strahan, he unfortunately fails to notice some experiments on the disappearance of the fetus after its expulsion into the abdominal cavity. Leopold has experimented by introducing fetuses into the abdominal cavity of dogs. These have been digested until the period of the more distinct development of the bony tissues has been reached. After that period they have become sources of irritation, and have been cast off by suppuration.

DR. M. PRICE.—I do not think that a study of the cases on record will make a man perfectly satisfied that he can say when he has a case of extra-uterine pregnancy. The ablest men throughout the world have satisfactorily decided that question. They

have made mistakes time and time again. They have cut for supposed extra-uterine pregnancy and found something else. They have cut for something else and found extra-uterine pregnancy. It is very difficult to decide until the abdomen is opened.

A ruptured extra-uterine pregnancy can only develop in the broad ligament. If it ruptures into the peritoneum, there is not a single case on record where, if the operation is delayed a number of days, the fetus has not disappeared. Hundreds of cases are on record. I have, myself, seen eight or ten where the fetus could not be found, where the microscope positively showed the presence of extra-uterine pregnancy. Those cases that go on to development are those in which there has been first a rupture into the broad ligament, and then development up to a certain time when the child can resist the digestive action of the peritoneum.

I would ask if this woman or any other woman with extra-uterine pregnancy could be benefited by electrical treatment. There is no question in my mind that in these cases electricity has done a vast deal of harm and has aggravated symptoms already existing, and has imperilled the woman's life to a greater extent than if she had been left entirely to nature. The knife, as Dr. Goodell has used it, is the only treatment. Delay is not justifiable at any period, unless when the case comes into the hands of the surgeon the child has passed to that degree of development that warrants its being left to the period of viability. All of these cases demand operative procedure at an early period, if they come into the hands of the operator.

DR. WILLIAM GOODELL—I fully agree with the remarks of those gentlemen who hold to the uselessness of electricity. I think that there is only a single class of cases of extra-uterine fetation in which electricity might be valuable, and that is in the early weeks before hemorrhages have occurred. An examination of the specimen before us shows, to my mind, that hemorrhages must have taken place in the tube, forming layers of organized clot. In such cases, I do not see how it is possible for electricity to do anything but harm. In those occasional rare specimens in which the chorion has remained intact, resembling an abortion coming away without rupture, the ovum being nothing more than a delicate but shaggy bladder, with the fetus inside, I can understand how electricity could do good by destroying the life of the fetus. Then everything might readily become absorbed; but as we can never know positively beforehand whether or not hemorrhage has occurred, my own feelings are in favor of immediate section.

While the difficulties of diagnosis are undoubtedly very great, this need not interfere with our treatment. We find a woman suffering from certain pelvic symptoms, and we discover an extra-uterine tumor of some kind. Now, a painful pelvic tumor must be removed, whatever it is. The only change in the treatment would be to hasten on the operation were the symptoms pointing in the direction of extra-uterine fetation.

DR. HOWARD A. KELLY read the report of

A CASE OF CHOLOCYSTORRHAPHY FOLLOWED BY CHOLOCYSTOTOMY AND EVACUATION OF ONE HUNDRED AND EIGHTY-EIGHT GALL STONES, AND RECOVERY.

Operative procedures practised upon the gall bladder must

always remain among the rarities in abdominal surgery, on account of the difficulties attending correct diagnosis and the technical difficulties of treatment.

The indications for operation are also more rarely found in any intrinsic disease of the gall bladder, but pertain rather to disease elsewhere, whether through the formation of calculi or stenosis of the common gall duct, by which the bladder itself is transformed into a retention cyst.

And inasmuch as this is the chief characteristic of the disease, it also forms a very important factor in accounting for the failure of the operation to cure the patient of all disability, and to accomplish more than a mere technical operative success.

Technique.—Inasmuch as the operation becomes one for the evacuation of the contents of the gall bladder or common duct, the technique of the operation involves an answer to the simple question, "What is the safest method of opening the gall bladder, and the safest after-treatment of the wound thus made?"

Under pathological conditions the contents of the gall bladder are often irritating, and must be carefully excluded from the peritoneum.

The plan which I adopted in the following case is applicable to a certain percentage of all cases, and will yield excellent results wherever similar anatomical conditions are found.

The steps are:

Incision through the abdominal walls at that point at which the gall bladder or its notch in the liver is to be felt most prominently.

Suture of the gall bladder to the margins of the incision.

Evacuation of its contents, either immediate or after the visceral and parietal peritoneal surfaces have united.

This preliminary suture of the gall bladder to the abdominal wall, excluding the peritoneum from danger of septic influence, fixing the gall bladder and providing for the subsequent escape of its contents by a fistulous track, is a step in the technique, with its own technical peculiarities, of such importance that I have dignified it by the name of "CHOLOCYSTORRHAPHY."

The application of the principles involved will be developed without further discussion in the account of the following case:

Frau B., a wizened, brown-skinned little German woman, 50 years old, is the mother of a number of children, and, aside from a single attack of jaundice when thirty years of age, enjoyed good health up to twelve years ago, when she lay many weeks abed with a severe febrile attack diagnosed as typhoid fever. She noticed at the same time the appearance of a well-defined tumor in the right hypochondrium. Since this time she has always been a sufferer with abdominal pains, indigestion, and constipation. The pains, although not located in any particular spot, were very definitely referred to as arising from the right side.

She suffered from menorrhagia two years ago, for which I was called in consultation by Dr. A. K. Minich a year ago. After dilatation and curetting, and a course of arsenic prescriptions by Dr. Minich, this disappeared, and she improved very markedly in every way.

Last January (1889) I was again called in consultation by Dr. Wintter to consider the nature of her abdominal complaint.

The lobes of a distinctly enlarged liver, also displaced downwards, 10 centimetres below normal, with a gall bladder greatly distended, elastic, and projecting far beyond its fissure, were easily detected, and the diagnosis of obstructed gall bladder made.

I operated on the 28th of January, in the presence of Dr. Wintter, assisted by Dr. Hunter Robb. As the liver was freely movable, and the gall bladder lay 3 cm. to the right and 4 cm. above the navel, an incision 4 cm. long was made in the linea alba. It was found to be a large, tense cyst about 13 cm. in length. Upon palpating the rest of the abdominal viscera through the opening, I found extensive mesenteric, small-intestinal, and colonic adhesions, made up partly of the union of broad surfaces and partly of sharp bands from 4 or 5 to 10 cm. in length. These were all carefully separated and broken up by the fingers used as a wedge between the broad adhesions, and bringing the sharp bands into view when they were cut. The oozing which followed this separation was but slight. The next step was to suture the gall bladder to the abdominal wall, so as to expose a part of its surface for subsequent incision. This was done by means of a series of fine interrupted silk sutures about an eighth of an inch apart, introduced so as to catch up the serous and subserous coats of the bladder and the visceral peritoneum.

The completion of the operation left a small wound, at the floor of which lay exposed a part of the gall bladder, 3 by 1½ cm. The whole operation lasted ten minutes. Iodoform gauze was placed in the wound, and absorbent cotton and bandage over the whole. On the third day the dressing was removed and the exposed bladder opened in its length by Paquelin's cautery knife. About 300 gm. of clear, sticky fluid like synovia escaped. On the fifth day I removed one hundred and six gall stones of varying size by means of a pair of small stone forceps. Three days after forty more were removed, and on the eleventh day forty-two stones more appeared. A stillicidium of fluid commenced with the opening of the bladder and lasted eighteen days, when the wound closed. The length of the gall bladder, measured by a sound, was 11½ cm. On the twelfth day she sat up, and on the twenty-sixth day she went home. The relief following the operation was perfect. She had no more pain, recovered her appetite, and became bright and cheerful in disposition.

DR. GEORGE E. SHOEMAKER reported a case of

PUERPERAL SEPTICEMIA.

Operation not indicated. Autopsy.

Because of the interest which attaches at the present time to the question of the place of laparotomy in the treatment of post-puerperal trouble, this case is reported. It is one in which the question of operative interference was weighed and decided in the negative correctly, as was shown by the autopsy.

B., aged 26 years, Irish, having had one child with indefinite history of after-trouble at that time, was delivered, April 23d. of a small male child before full term.

At five and one-half months she had had a free hemorrhage from the vagina, which was stopped under another practitioner's care. Three days prior to the labor, while asleep in bed at 3:30 A.M., she was again seized with free bleeding. She sent for another practitioner, who gave ergot, and the hemorrhage ceased. There was no pain, and the ergot did not bring on labor. Just forty-eight hours later, while again asleep in bed, another free hemorrhage occurred, again without pain. Several hours later, or two days after the first hemorrhage, the writer was called.

The bedclothing, body linen, and mattress were much soiled by large quantities of dried blood. The vagina contained considerable offensive clot, the os was dilated to the size of a half-dollar and was occupied by clot, the pains were absent, the child living and presenting L. O. A. The margin of the placenta was easily felt posteriorly and to the right, so that, as might be expected from the history, there was partial *placenta previa*.

Efforts to remove the septic surroundings were begun at once. The nurse in attendance, ignorant and unclean, with a suppurating skin eruption in the palm of the hand, was discharged, and a trained nurse obtained from that admirable charity, the Visiting Nurse Society. Soiled clothing was removed, a vaginal bichloride-of-mercury douche given, the matted pubic hair cut off, and the patient's body and hips thoroughly bathed in 1 to 1,000 sublimate solution, this being a greater strength than would have been used but for the decomposition. All this was several hours before the labor terminated; and from a time at least four hours prior to delivery, strict antisepsis was maintained by the free use of mercurials on hands and about the patient. It was too late: the decomposed blood had poisoned the system before delivery—a clear case of ante-partum infection. Hemorrhage did not recur, so that no measures were necessary for its arrest after the writer assumed charge of the case. It was the intention to perform version at once on its recurrence, as much blood had been lost and the child was weak. The labor terminated spontaneously without complications, the child being alive and the mother in fair condition, though with apparently some rise of temperature. Unfortunately the thermometer was not used. A 1 to 4,000 bi-

chloride-of-mercury hot intra-uterine injection was given immediately, but the temperature rose above 103° eight hours later; that is too soon for post-partum infection under the circumstances. There was, however, no tenderness over the uterus, no pain, no sign of peritonitis, and no abnormal odor to the lochia, which were apparently normal. Another 1 to 4,000 bichloride injection was, however, carried into the uterus, and the treatment with quinine and whiskey begun, which lasted throughout the case. Epsom salts, 3ss. hourly till the bowels moved, disturbed the stomach without improving the general condition later.

There was no decided change for four days; the fever reached about 103° in the afternoons, but the stomach acted well and the strength was fairly maintained. The lochia were without abnormal odor and of fairly natural appearance till the end of the second day, when the injections were stopped, to be resumed later on the appearance of slight odor. There was at no time any great tenderness about the uterus or over the abdomen, which remained soft and undistended. As the case progressed, no definite local complications appeared. There was no uremia and no sign of mercurial poisoning; the bowels acted well. On one occasion a considerable swelling occupied the abdomen in the median line below the umbilicus. At first glance it was supposed to be the uterus distended by clot, but when light pressure by the hand was made upon it, much to the writer's surprise the swelling at once and permanently disappeared, while at the same time there was an audible escape of gas, probably from the vagina.

From the patient's mental condition, exact information was not obtainable, and there was no opportunity to repeat the experience. Was this physometra? The pelvis was repeatedly examined, but no accumulations could be felt. There was evidently no considerable amount of necrotic material in the uterus, for the discharges did not indicate it. There were no symptoms of peritonitis at any time, and, in spite of the fixed determination of the patient to die, the outlook was fair until after the fourth day. From this time till the eighth and final day the progress was downward. The temperature became 104° in the afternoons, with violent active delirium, obstinate insomnia, and profuse perspiration, especially at night. The stomach and intestines remained in fair order, but the nervous condition was very bad.

The temperature rose on the morning of the eighth and final day to 106.6° , and the patient died of exhaustion. No attempt at laparotomy was made, because none seemed indicated in the absence of peritonitis or any sign of definite pelvic trouble. With the utmost difficulty, permission was obtained to make an autopsy, the husband being present to see that nothing was removed.

Autopsy twenty hours after death. Rigor mortis; emaciation; abdomen very slightly distended. Abdominal cavity contained

the usual amount of serum, which was pinkish red, not turbid; contained no flocculi, but simply stained muslin without leaving residue. No sign of lymph exudate or pus. Peritoneum and intestines pale and smooth, without any adhesions and without hemorrhagic spots. Intestines not overdistended. The uterus, as large as a large fist, was distended by gas, and when compressed remained collapsed like a bag. It was pale bluish white in color, incision showing the walls to be about one-third of an inch in thickness; the cavity empty of all fluids. A pinkish red, thin, transparent coating of mucus covered the lining membrane. This mucus was not abundant enough to flow—simply a coating. It was examined under the microscope, and found to contain no pus, but to be made up largely of epithelial cells of various ages, showing very marked fatty change. The large amount of fat was remarkable. It was not extraneous, as no lubricant could be obtained for use on the hands. The left tube was of the size of the little finger, and when first touched apparently contained gas like the uterus. It collapsed with handling, but no liquid could be found in the uterine cavity which could have been squeezed from it. It was not adherent, and when delivered with the ovary through the abdominal incision and incised did not look unhealthy and contained no fluid. The right tube was smaller and contained no gas. It was adherent to the uterus and the right side of the pelvis by old adhesions, but was delivered with the ovary through the abdominal incision, incised, and found empty. Both ovaries were of normal size, the tubes of a bluish pink, and pale, like the other organs and peritoneum, from loss of blood. No collection of pus or any size of infection, removable or otherwise, could be found in the abdomen or pelvis. Other portions of the body were not examined, owing to the exigencies of the post-mortem. There had, however, been nothing to call attention to them. The cause of death, then, was general septicemia, with no continued source of infection near the point of original departure.

The question of the treatment of post-puerperal septic conditions by abdominal section, as suggested and practised by Mr. Tait and others, is one of great importance. The reports of successful cases demonstrate beyond doubt that in laparotomy a new and very valuable means of combating some forms of a fatal disorder has been developed.

Just now we are in need of more definite clinical knowledge as to when the belly should and when it should not be opened. Where peritonitis persists, the profession is rapidly reaching the conclusion that laparotomy increases the patient's chances, or, if there is a distinct purulent collection, that it affords almost her only chance.

Whether pus is to be found in the peritoneum, in the tubes, or in the connective tissue, whose intercellular spaces are continu-

ous with the lymphatic vessels, its removal, followed by drainage, is unquestionably indicated. Where the uterus itself is infected to such a degree that the local use of dull curette and antiseptic douche will not remove the source of infection, there is nothing suggested which is more promising than hysterectomy, though in practice this is likely to prove disappointing from prior general infection. It must not be forgotten, however, in these days of readiness for operation, that there are cases, such as that here reported, where there is early a general infection, not from pus, for there is none formed, nor yet from any remaining focus of infected material; and where it would be just as useless to incise the peritoneum or remove tubes as to remove the stomach hours after a poisonous dose of atropia. There are some cases in which, if they go on long enough, abscess may form late, especially from emboli where phlebitis exists; but the pus may lie in lung or brain, as well as in more accessible localities, and the hope of recovery does not lie in laparotomy.

What is demanded, therefore, in each case is a careful study of that case by itself, and repeated examination for foci of infected material. When these are found, they should be removed, if accessible, at the earliest possible moment, and by any safe means which will thoroughly do the work.

DR. WILLIAM H. PARISH.—The question of laparotomy for septic infection accompanying or following labor is one of great importance. Doubtless many errors have been made in not opening the abdomen, while against this is the fact that at the present stage of abdominal surgery we should be on our guard that we do not go to the other extreme and open the abdomen, in cases of septic infection following labor, when the operation is not indicated. It has so happened that in an acquaintance with the Philadelphia Hospital extending over fifteen years, I have seen a goodly number of autopsies in cases of septic infection after labor. I have seen few instances in which the autopsy showed that laparotomy would have been of any special value. Where there has been a pus accumulation without fatal general septic infection preceding it, and that pus cavity is so located that it can be opened and drained or entirely removed, the operation is a proper one. If there is reason to believe that there is an accumulation of pus in the peritoneal cavity, it will be right to open the peritoneal cavity and remove the pus, provided the woman is not in a moribund condition. There are, however, cases in which the purulent peritonitis develops very late in the history of the case. There are not a few instances in which the septic infection, as it has extended from the uterus, shows its local effects in the lymphatics, and the fatal result is probably determined before the peritonitis takes on very active form. I am sure that I have seen this occur. In an endemic in which twenty or thirty autopsies were made, we found the peritoneum in various stages of inflammation. Cases that died early showed inflammation of the lymphatics and the formation of pus in the lymphatics, particularly of the broad ligament and uterus, with swelling of the areolar tissue and degeneration of the peritoneum. In other

cases, the condition was more advanced, with the formation of lymph and flocculi and turbid fluid in the peritoneum. In other cases, where the patient lived still longer, we found a larger quantity of purulent-looking fluid. I believe that if these cases had been operated on, the result would not have been favorably influenced. In fact, I think that in some the fatal result would have been promoted by operation. It requires more judgment, and I think probably more skill, to determine when the abdomen should be opened in these cases than to do the operation.

I have in a few instances opened the abdomen after labor, and, as I think, have thereby saved the patient. It has so happened that in all the cases in which I have opened the abdomen after labor the pus has been in the areolar tissue of the pelvis. These cases have recovered. I have not operated on a patient after labor who has not recovered. I do not recall a single instance of pus in the tubes. There was a limited quantity of thickened fluid, but nothing like pyo-salpinx. I think that this is rare, especially in endemic septic infection.

DR. J. M. BALDY.—I agree with Dr. Parish in regard to the difficulty of deciding which of these puerperal cases are subjects for operation and which should be let alone. At one time I thought that it was rather easy to distinguish, but as cases came one after another into my hands, I found it extremely puzzling to know what to say. If there is pus in the tube, which I found in one case, it is easy to settle the question. It is often difficult to say whether or not there is pus at all. In the vast majority of cases in which I have been asked to decide for or against operation, I have advised waiting, and all of these cases have recovered, showing that there was no pus. If you can make up your mind positively that there is pus or purulent fluid, there would be no question as to the advisability of operating. I should not wait because the woman was far gone, in the hopes of bringing her up. I think that the pus is at the bottom of the trouble, and that the only way of saving her is to stop its absorption at once by removal. The great difficulty is to decide whether pus be present or not, and it requires caution, or we shall be led into many operations which will be unnecessary.

I think in the case of Dr. Shoemaker that the question of operation would not have come up at all. It was not a case of peritonitis, nor were there symptoms of local trouble. From the report I can see no indications for the use of the knife. I think that this was clearly a case of absorption of ptomaines, and in such a case there never would be formation of pus.

DR. M. PRICE.—I have had rather an unfortunate experience with this operation. In three cases that I have had there has been persistent vomiting. For days there had been fever and quickened pulse and a well-marked chill. Upon examination there was unquestionable evidences of pelvic inflammation. In one case tubal trouble was well marked, and the uterus could be mapped out from the tubes. In this case the operation was performed on the eleventh day, after it had been determined that the woman had peritonitis. Three pints of pus poured out. The pus had burrowed up behind the kidneys on either side. The case was fatal.

The second case was one of criminal abortion, where the girl fell into Dr. Musser's hands at the last minute, and he sent her to me. Within six hours I operated and found three pints of pus.

No well-marked tubal trouble could be found. All the surroundings were in a semi-gangrenous condition. The patient died.

The third case was seen a few weeks ago. The pelvis was as solid as if it had been frozen. She had a chill and the broken tea-leaf appearance of the vomit. She finally consented to an operation, and, on opening her, from one to two pints of pus escaped. Nothing was done but to open the belly, break up the inflammatory adhesions, wash out the cavity, and use drainage. In these cases, I think that early operative procedure would have given the patients a chance for their lives. If I were to-night to see a case of septic peritonitis where there had been a chill, some distention of the bowel, a fixed condition of the uterus, I should not hesitate longer than to obtain my instruments.

DR. J. PRICE.—Dr. Parish has selected his cases well; he has not made any mistake; he has operated in suitable cases, and others he has permitted to die because any operative interference would simply have hastened death. In all the cases in which we have operated, we have been able to place our fingers on something before operating. The cases reported by my brother were all dying. It is unfortunate for surgery that we should be forced to operate on a dying patient. A large number of puerperal cases have been saved. Dr. Baldy has saved two cases. I have had a number in my own practice. Dr. Bernardy has had one, and I could cite a number of other cases. In none of the cases cited by Dr. Parish did he put his hand on anything on which to operate, and he cannot cite a single case in which he opened the abdomen when he should not have done so.

DR. W. H. PARISH.—I wish to add one word in regard to operating when the conditions seem to be fatal. I did not mean to say that I would not operate on an abscess, believing such to be present, when the patient is very ill. In one instance I removed one and a half gallons of pus from a patient in a condition of extreme emaciation and almost ready to die. She is now well. I should hold off from operating in a case in which the blood-poisoning was so great that there was no possible hope for recovery. Where there is an encysted abscess, the patient will live a long time; but in endemic diseases with dense septic infection, the patients, even when first seen, are often so ill that exploratory incision would certainly not be a proper thing to do, inasmuch as it would add to the mortality following surgical operations and deter others from operating and other patients from being operated upon. If there is reason to believe that there is a pus cavity, I should operate if the patient was almost *in extremis*. Where, on the other hand, blood-poisoning was the main trouble, I should not open the abdomen as a matter of exploration.

DR. JOSEPH HOFFMAN.—There is one point in connection with the case of Dr. Shoemaker to which I would call attention, and that is the use of the bichloride and the absence of odor. It seems to me that the absence of odor must have been due to the bichloride. The statement that there was no odor is perhaps a little too wide, inasmuch as disinfection was used persistently. It seems very evident that the case was one of general septicemia from the preceding dirt, and that the peritoneal condition was only an incident to the general systemic poisoning. I have seen one case die from general peritonitis in which there was pus, but in which the symptoms appeared only on the eighth day, the patient succumbing on the tenth day.

THE PRESIDENT.—How do you explain the physometra?

DR. GEO. E. SHOEMAKER.—I did not assert that there was physometra. I only asked if the escape of air from the uterus or vagina could have been so explained. If there was gas, it was probably the result of decomposition. There was no peritonitis at any time. When I say that there was no odor to the lochia, I mean no abnormal odor, except at the time mentioned, when there were indications for disinfection.

I would like to call attention to one difficulty in the diagnosis of post-puerperal pelvic abscess. Over a year ago I had a bad case of septicemia in a woman who had been delivered by another gentleman. She developed on the left side of the uterus a decided sense of resistance, and a tumor apparently the size of the fist and tender on pressure. The temperature was 105°–106°, and there were profuse sweats at night. I felt very solicitous as to whether or not there was pus. The enlargement proved to be a fecal mass, which purgatives removed in a few days. No operation was performed, and to-day there is not a healthier woman in the city.

DR. J. PRICE presented specimens with the following remarks:
I asked Dr. Penrose for

A LARGE FIBROID WITH CYSTIFORM DEGENERATION

to present in connection with a large myoma. This case demonstrates a point from a pathological and from a therapeutic and electrical point of view. It was the clearest case for diagnosis that I ever saw. The woman was 46 and the tumor ten years in developing. Last year there was almost constant bleeding. There was rapid development, with faint fluctuation at points. It was one of those tumors of which Atlee gives five in his three hundred and seventy-eight ovariectomies. It was generally adherent, and the doctor tapped it to reduce its size, that he might deliver it through a smaller opening. He found between the uterine cavity and the cyst a membrane as thin as the amniotic membrane, with vessels as large as the finger. If in such a case any one had passed an instrument, he would probably have lost his patient on the table.

I have here a soft myoma, which is probably one-half the size that it was when removed. It extended high up to the diaphragm. It was of rapid development. It is a true myoma—an edematous myoma. The patient was 29 years of age. On the left side posteriorly I could feel bodies, independent of the tumor, which moved with the cervix. I was satisfied that it was a myoma, yet it did look like one of those ovarian tumors with solid contents, and these solid bodies posteriorly. On the right side is a small blood cyst, perhaps the size of a hen's egg. The shrill and aneurismal noises on the right side posteriorly were very curious. On vaginal examination, it was the most marked that I ever felt. When I came to operate I feared to pass the needle so deep, and ventured to shell this ovary out. The vessels were as large as the iliacs.

These two cases demonstrate to me the uselessness of electricity

in many of these cases. It seems to me to be about as probable that we could act upon the primitive iliacs or aorta by electricity as that we could influence vessels the size of the finger in this tumor. This was an extra-peritoneal, supravaginal operation. The operation was quite simple. I removed the tumor well down to the wire to prevent overlapping, and stitched the stump as is done by Bantock. The last operation was done on Tuesday. That of Dr. Penrose was done a month ago.

I have here a small ovarian cyst which some would call an intra-ligamentary cyst. I have some doubts as to the nature of intra-ligamentary cysts. I look upon them as pelvis bound by adhesions. They have been tapped and pelvic adhesions formed. In such cases I have had to begin at the incision with the knife, and sometimes to finish with the knife. The tumor was covered by adhesions. It was on the left side, pressing upon the bowel, causing difficult and painful defecation. She had had attacks of pelvic inflammation. There is here a small blood cyst as large as a walnut. I dreaded to tap it, fearing that it contained that sebaceous, putty-like material of dermoids which is so difficult to remove. The patient has asked me to preserve the tumor, and she has bought a jar in which to place it.

I have here a doubtful specimen. It may be a hemato-salpinx or it may be a tubal pregnancy. It was removed by Dr. Penrose. There is no semblance of a pavilion.

Some time ago I had a case in which the placenta and clot was in the cornual extremity. When I removed it, a rose-shaped clot, as large as a good-sized rose, protruded from the pavilion extremity. Here the abdomen was filled with blood. This woman had had pain and had hemorrhage recurring from time to time.

The history in the case of Dr. Penrose just referred to was that the woman had been married four years, but had never conceived. She was at this time living as a domestic. She was examined at the dispensary and sent to my office the same evening, the suspicion being that it was a case of extra-uterine pregnancy. There was a delayed period. She had had agonizing pains, which had recurred, and she had been in bed several days. I at once sent her to the hospital. There was constant vomiting for the next four days. Aside from this there were no alarming symptoms. The operation was postponed for four or five days, until the nausea entirely subsided. As matters stand now, the woman is reacting nicely, there is no nausea, and she is doing well. It is curious how we reason about these cases.

In regard to these fibroids, we are now guided largely by the size of the tumor and its character. In myoma the removal of the appendages is, in my opinion, simply useless at any period; and in these large fibroids with nodules and probable extension into the uterus, and where degenerative changes have taken place in the uterine wall, I believe that it is about as useless.

In regard to extra-uterine pregnancy, I would call attention to two or three cases on record, and to the uselessness of electricity, and to some points in diagnosis. Bantock recently removed a ruptured tubal pregnancy on one side and a pyo-salpinx on the other. In that case it would have been impossible to make any refinements in diagnosis. Dr. Eddis exhibited to the British Gynecological Society specimens of recent operations. One was an ovarian cyst the size of a hen's egg, and above this the right Fallopian tube was enlarged about the size of a small walnut by an extra-uterine pregnancy. This had ruptured at the other end. This case was a typical one, and illustrates very beautifully how common it is to find a mixed condition of affairs in the pelvis. Such has always been my experience. When we open the abdomen we do not know what we are going to find. We may not have the slightest suspicion of extra-uterine pregnancy, and yet, in many cases, as has been demonstrated in this town, find one.

It is common to find small blood cysts, and these small tumors contain peculiar little bodies. These small blood cysts often look like extra-uterine cases, but many of them are not.

DR. WILLIAM GOODELL.—In regard to the treatment of the pedicle in simple hysterectomy, I have had within the last two years at least a half-dozen cases, and in some the tumor was very large. One weighed over thirty pounds; another weighed forty-six pounds, and the abdominal incision in this case was the longest I ever made. The pedicle was a little larger than my wrist. In these cases I have ceased to use the extra-peritoneal method, but have dropped all the pedicles, and all the women have recovered. I transfix the pedicle with a double ligature and tie on either side provisionally. Then the tumor is cut away and the pedicle is scooped out so as to be funnel-shaped. Each ligature is now untied, its free ends wrapped around the handles of two forceps, as a purchase, and retied as tightly as possible. I then close up the cup-shaped cavity by sewing the peritoneal edges together. In the last case I did this with the continuous silk suture. In one case I used catgut, but in all the rest silk. All the cases have recovered as promptly as after a simple ovariectomy. Unless the pedicle were of extraordinary size, I would in future resort to this method, for convalescence is far more prompt than with the extra-peritoneal method. In these cases I have not used the drainage tube unless there were adhesions. In the case of very large tumor, the adhesions were so formidable that the woman came nigh dying on the table. In this case I used the drainage tube, but in most of them I did not.

DR. JOSEPH HOFFMAN.—I thought that Dr. Price would have referred to a case of my own in which there was extra-uterine pregnancy and pyo-salpinx. The diagnosis could have been made had not the woman's condition been so critical that it was not necessary to go into any refinements.

In the case of fibroid tumor shown, the belly, previous to operation, was certainly as large as at a seven months' pregnancy. In reference to the blocking-up of the intestines, I removed three weeks ago a tumor two-thirds the size of the one shown. The woman gave a history of pain in the side ever since

menstruation, and pain and trouble in defecation so great that they could only be explained by adhesions. The tumor was not large enough to make sufficient pressure to cause such trouble by its weight alone. She had suffered so long that I expected to find a dermoid cyst. The question to my mind was whether this had been developing for a long while, was still growing, or had grown so far and stopped.

I do not think that if Dr. Price had the experience that I have had in the last few days he would give his specimens to patients. An attempt to blackmail me was made by a woman to whom I gave a specimen. She took it to another doctor, who encouraged the idea that nothing had been wrong and that the operation was unjustifiable. This was one of the most severe cases that I ever attempted to deal with. The adhesions were so great that I had to use a drainage tube for two weeks.

DR. J. PRICE.—In regard to the treatment of the pedicle, at a discussion before the American Gynecological Society at New York, Dr. Bantock and Professor Martin had the opportunity to present the relative merits of the two methods of treatment, and I think that Dr. Bantock demonstrated to the satisfaction of the Society that the extra-peritoneal method was the better one. We are inclined in all work to follow successful operators. I am glad to hear Dr. Goodell state that he has been so successful with the intra-peritoneal method—much more so than Professor Martin and others; Professor Martin's mortality from hysterectomy is still high. Dr. Bantock's is down to twelve per cent to fourteen per cent. Mr. Tait has had a run of thirty-two supravaginal amputations without a death. Mr. Keith lost three in thirty-eight or forty. The three most successful operators in the world are Bantock, Keith, and Tait. They are all three working with a mortality less than fourteen per cent. This is about as low as Meredith Thornton in ovariectomy. Many cases such as Dr. Goodell mentioned are quite tempting. In my case the pedicle was larger than the wrist. I screwed up the clamp five times, and each time I thought that it was quite tight. I have never lost a simple hysterectomy. I have lost two with cancer. In both the disease had invaded the bowel, and I do not see that it would have been any advantage to them to have gotten well.

In regard to drainage, that is still a disputed point. After dropping the pedicle, Professor Martin pushes a rubber tube up through the vaginal vault. While he does not approve of drainage from above, he does from below. Mr. Bantock drains largely where there are adhesions. For myself, nothing would at present shake me in my views in regard to drainage. In my first series of one hundred cases, I drained in forty-six per cent; in the next, I drained in over fifty per cent.

DR. H. M. WEEKS reported

A CASE OF OVARIOTOMY.

In October, 1888, a case for operation was placed in my charge. The history of the case was briefly as follows: Less than a year (about ten months, as near as the patient could remember) before I saw the patient, she was seized with a sharp pain in the right ovarian region. A physician was called, who diagnosed an acute attack of inflammation of the ovary. Anodynes were freely

given, hypodermically and by the mouth, and a blister applied over the seat of pain. The pain still continuing, and the patient growing weak and losing flesh, the physician in attendance was dismissed and another called, who diagnosed an abscess, and treated the case for some time with anodynes, counter-irritation, and fermentation. Then was discovered a slight enlargement of the abdomen, which seemed to confirm the medical man in his opinion of an abscess being present, and he decided to await developments. In the meantime, the case passed into still other hands, and this time the physician, upon his first examination, found a tumor in the pelvis, which, however, he was never able afterwards to find. The pain gradually grew less, and, though the patient was weak and did not regain her flesh nor her usual health, she resumed her household duties, noticing more and more the enlargement of her abdomen upon the right side.

About three months before I saw her she was taken with symptoms upon the left side identical with those which initiated the trouble upon the right side. Dr. H. W. Coleman was now called, and after a careful examination diagnosed an ovarian cystoma of the right side, and commencing trouble of the same kind upon the left side. The doctor advised an operation, and requested that I be called into the case.

Upon examination I found a large tumor high up in the right lumbar region, not very freely movable, and from the vagina it could not be reached by bimanual examination with as much force as was bearable by the patient. Upon the opposite side there could be plainly mapped out an enlargement in the iliac region about the size of a cocoanut. By the vagina this mass was found to be firmly adherent, and filling the entire left side of the pelvis, pushing the uterus forward and to the right of the median line. I gave it as my opinion that there was on the right side an ovarian tumor with long pedicle, and adherent to the abdominal walls and contents above—which accounted for the want of mobility, and also for the height of the tumor in the cavity—and that the mass occupying the left side of the pelvis was a cyst of the left ovary bound by pelvic adhesions. As the patient was in a fair condition as regarded her general health, and was anxious to be relieved of her suffering, I advised an operation as soon as practicable.

The patient was placed in my private hospital, prepared for an operation, and upon the 19th of October, assisted by Dr. Charles B. Penrose, of Philadelphia, I opened the abdomen by an incision about three inches in length between the pubes and the umbilicus in the median line. A considerable amount of dark fluid escaped from the incision upon opening the peritoneum, and after separating the omentum, which was adherent to the pubes. I began to release and deliver the mass upon the left side, which was found to consist of a multilocular, papillomatous ovarian

cyst, firmly bound by adhesions to uterus, bowels, and pelvic walls, and also an intra-ligamentous cyst. Everything was firmly adherent, and the bleeding so free from some of the points of adhesion as to require ligatures to be used freely, styptics failing to control hemorrhage. It was found necessary to increase the size of the incision to about five inches in order to complete the enucleation and deliver the mass, a portion of which could not be separated from the pelvic wall, and was therefore left behind. I now turned my attention to the large cyst of the opposite side—a multilocular ovarian cystoma. This was found adherent to the abdominal wall, the colon, and everything with which it had come in contact. Adhesions were separated as rapidly as possible, the trocar introduced, and as much fluid as possible evacuated, when the hand was passed in and the smaller cysts broken up, and the whole mass brought out through the incision. A ligature was thrown around the pedicle, which was about five inches in length, and after cutting away the mass the stump was dropped back. The abdominal cavity was thoroughly cleansed by irrigation, a large amount of water being left in the cavity on account of the weak condition of the patient, due to shock; a drainage tube was placed in the incision, and the abdomen closed in the usual manner. The patient was placed in bed greatly exhausted and profoundly shocked, from which she rallied in about twelve hours, and went forward to recovery without an unpleasant symptom. The patient and her family were informed that there would probably be a return of the trouble, owing to the nature of the tumors removed, and in view of the fact that a portion of one of the cysts could not be gotten entirely away.

The latter part of March last, five months after the operation, the patient called at my office to consult me about a pain in the left side, and about an enlargement of that side.

Upon examination I found a tumor about the size of a fetal head occupying the left side of the pelvis, firmly adherent. I advised another operation, at the same time explaining to the patient and the family that it might not be possible to remove the growth, and, if so, only an exploratory operation would be done, but if possible the tumor would be removed; with this understanding an operation was consented to. The patient subsequently passed into the hands of Dr. J. M. Baldy, who operated.

There were some points in connection with the case that may be of interest, which were not known to me at the time of my taking charge of the case, nor until after she was discharged from my care. The patient had lost a sister, an aunt, and a cousin, all with cancer.

Another point in the case was the age of the patient. She gave me her age as 49 at the time of the operation, and when she came to me again in March she told me she was 50. In this connection, it may be proper for me to anticipate Dr. Baldy some-

what, and state that the patient died of cerebral apoplexy on the 29th day of April, and her age was published as 52 years; but I am informed by very good authority that it was, and always had been, a propensity of this woman to make herself as young as possible, and that she was in reality not a day less than 60 years of age.

DR. J. M. BALDY reported the following history :

The subsequent history of Dr. Weeks' case of

MALIGNANT PAPILLOMA

is reported for two reasons: because of the unique ending of the case, and for the reason that we have need of the history of deaths more than of recoveries at present.

I saw this patient some three or four months after the first operation, and found the condition present very much as related by Dr. Weeks. At the operation which followed, the old incision was found perfectly united. No adhesions to the abdominal wall by intestines or omentum. Tumor as large as child's head and filling the pelvis. The intestines and omentum were adherent over its entire upper surface, excepting at one point as large as a small orange. The cyst was undoubtedly intra-ligamentous and not simply bound down by adhesions. It was composed of smaller cysts, many of which were ruptured in the enucleation. It was too low down and too universally adherent to allow of an attempt at tapping it, and the rupture was unavoidable. It was altogether the most difficult and trying operation I have ever attempted. After its removal there was but one point which was not ragged, showing the condition of universal adhesion. There was no pedicle, and only at two points were adhesions tied. These points might have been dealt with differently, but were tied to spare time. Patches of intestines as large as one's hand were denuded of their peritoneal covering. There was considerable oozing when the abdomen was closed, but, as the patient was doing badly under ether, the drainage tube was trusted for controlling this, and in a few hours it had all stopped. Irrigation with simple hot water was freely used. She was in bed within the hour, and soon reacted from the anesthetic. For five or six days she progressed splendidly, and would probably have continued to do so, but the drainage was prolonged beyond all use and the track became affected. There was a quick rise of pulse and temperature, which subsided as quickly within twenty hours on the discharge of a few spoonfuls of pus. She then improved steadily, and was considered almost well; in fact, was to have gone home the next day. On the seventeenth day she was feeling better than she had for years, had slept soundly the night before, and had eaten a large breakfast with relish. She was laughing and joking with her nurse, when she suddenly gave a start, became unconscious, and was dead within twenty minutes.

At both operations she had behaved badly under the anesthetics. The cyst was of a malignant, papillomatous character.

The post-mortem examination revealed the following: Union along line of incision perfect. Omentum adherent to abdominal walls to the left for an inch; to the right, the intestines were adherent over the brim of the pelvis and to the drainage track; at the bottom of the drainage tube was a small quantity of pus. Pelvis perfectly smooth and clean. Spleen normal. Liver normal. Kidneys normal. Heart fatty, infiltrated. The right side dilated with a chicken-fat clot; left side, the walls were thinned. The mitral valves had undergone calcareous degeneration. Brain: about two ounces of fluid in the arachnoid cavity; cerebellum soft. In the fourth ventricle a small vessel was found ruptured, and the ventricle was filled with a blood clot. A piece of calcareous plate was here found.

This clearly indicates the manner of death. It is possible that the action of the heart under the anesthetic may have loosened the calcareous plate on the mitral valve, and thus been the cause of death some time sooner than would otherwise have occurred. In no other way can the death be attributed to the operation. It is unfortunate that the accident did not delay a few days longer, but then I suppose the friends would have said we moved her too soon.

It is a matter of surprise to me that there were no more adhesions than the autopsy disclosed, the denuded surfaces had been so extensive. Had the trouble with the drainage tube not occurred, the patient would have been home when she died; but there are some things we cannot control, and the unnecessarily long drainage here is a case in point.

DR. J. B. DEEVER exhibited a

LARGE MULTILOCULAR OVARIAN CYST.

The patient was from Maryland. There was considerable ascitic fluid. There was a large tumor on the left side containing colloid material. The woman had suffered considerable pain. There were also papillomatous contents, and malignancy was suspected. A smaller tumor was removed from the right side.

DR. M. PRICE exhibited

A SUBSTITUTE FOR SENN'S PLATES.

This is simply a transverse section of the femur of beef, which has been decalcified. It is used in the same way as Senn's plates. The openings in the transverse section are across instead of on the plane of the surface of the bone, and absorption will take place more rapidly. The advantage over the Abbé ring is that this holds its form, while the catgut ring is liable to twist and give some trouble in its application. These plates are being used by Dr. Deaver and my brother upon some dogs, and later they will make a report of their observations.

DR. H. M. WEEKS exhibited

AN ANTISEPTIC LIGATURE BOX.

This box is presented to the profession for preserving and carrying ligatures that have been prepared and rendered aseptic or antiseptic, enabling the operator to cut his ligatures and suture, at the time of operating, without danger of soiling or infecting the portion not required for immediate use. It is made of a fine quality of earthenware, thus securing strength and durability; at the same time it is light, compact, ornamental; and last, but not least, it can be furnished at a price that will enable every



one practising surgery to provide himself with one or more. The box can be had in any color desired, or with any decoration the consumer may wish.

The accompanying cut represents the different parts as follows: The box is round, four inches in diameter and two inches high, with an outside cover, No. 3, that is held in position by a neat clamp, No. 1, which, when adjusted, is prevented from slipping by a slot on either side of the band or flange at the top of the box, the screw holding the cover tightly down upon the rubber washer, No. 3, which encircles the top, and renders the box absolutely air

and fluid tight, so that the ligatures can be carried constantly in any solution desired without danger of leakage.

The inner cover, No. 5, is a flat disc with a slot cut in the edge to allow it to be placed in position, and held by two small catches placed on opposite sides of the box; the small knob in the centre serves to turn and place and remove the cover. There are four holes perforating this cover for the four sizes of silk generally used, and half an inch from the edge of the cover there is a raised band, also perforated, for the silk to pass, thus making it impossible for the end of the ligature to drop back into the box when cut. This cover rests upon a ledge, and is left in place except when necessary to fill the reels or spools with silk or the box with solution.

The reels or spools, No. 6, four in number, stand upright, and are held in position by separate spindles, No. 7. The whole box is highly glazed; there is no metal nor anything that can be acted upon by any solutions, and the material from which it is made can be subjected to any amount of heat, either dry or by boiling. It can be taken apart in a very few seconds, and every part thoroughly cleansed.

Should any of the parts break, they can be replaced, as they are interchangeable.

They may be obtained from J. H. Gemrig & Son, 109 South Eighth street, Philadelphia.

TRANSACTIONS OF THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, Friday, June 21st, 1889.

The President, CHARLES T. PARKES, M.D., in the Chair.

DR. W. W. JAGGARD read the following notes on

I. A CASE OF FETAL APLASIA.

The monster whose photograph I present was recently delivered by my friend, Dr. W. A. Mansfield, of Metamora, Ill. Dr. Mansfield has written the following excellent account of the case:

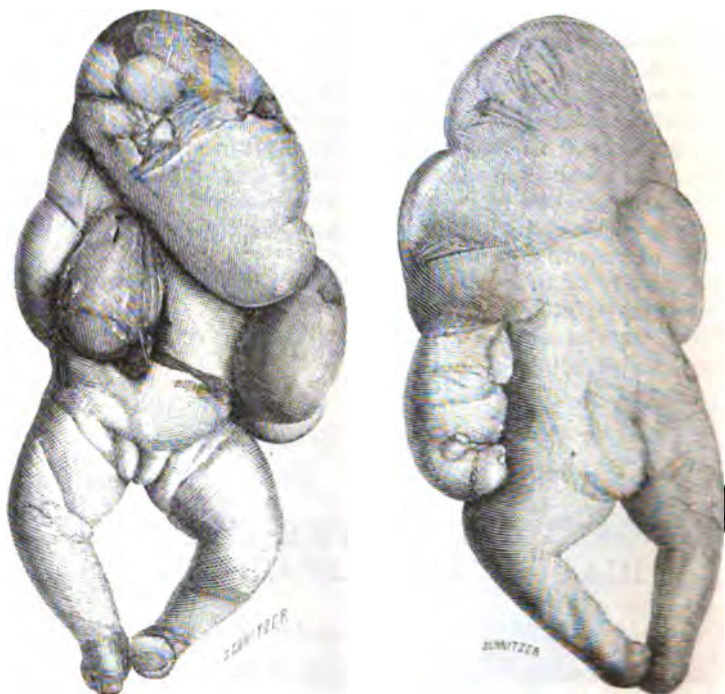
The case of confinement in which I delivered the monster was one of twin pregnancy at about the seventh month. The mother was a multipara.

The normal twin died soon after birth.

The course of pregnancy was abnormal. Sixth to ninth week severe vomiting. From this time on, extremely rapid increase in the size of the abdomen. For three weeks before confinement,

patient could scarcely eat anything and was subject to severe attacks of dyspnea from pressure.

When I first saw the case, there was effacement of the vaginal portion, the os was fully dilated, membranes presenting. Head freely movable above the brim. Negative results from abdominal palpation, on account of excessive hydramnion. The membranes ruptured, and after four hours, the head having engaged and having ceased to advance, I gave the patient one-half drachm of the fluid extract of ergot and applied the forceps. With more than very moderate traction the blades would slip over the head. After



Front View.

APLASIC MONSTER.

Rear View.

a few trials, I brought the head down far enough to introduce a finger into the mouth (face anterior), and by considerable effort succeeded in delivering the body. The amount of liquor amnii that escaped I estimated at four gallons. The weight of the monster was ten pounds, that of the normal twin four and a half pounds. The placenta was single and the largest I have ever seen. It was fourteen inches in diameter and one inch in thickness. It filled a medium-sized chamber-pot. Altogether the weight of the uterine contents could not have been less than forty-five to fifty pounds.

The mother made an excellent recovery without complications.

The tendency to uterine atony immediately after labor disappeared under massage and ergot.

The length of the monster was 15 inches; vertex to pubes, 10½ inches; circumference of head above ears 11½ inches, at level of ears 13½ inches, below ears 15 inches; circumference, chest, 17 inches; pelvis, 10 inches. Weight, 10 pounds. All the tissues edematous. Lower extremities normal, except feet, which were clubbed and had but two toes each, great and second. External genitals, female, normal. No anus present. Right side of abdomen and right side of thorax occupied by a vesicular tumor, 2½ by 2 inches. On dissection, this tumor found to be of spinal origin, pedicle arising from the seventh cervical and first thoracic vertebræ. Sac continuous with membrane of cord and filled with cerebro-spinal fluid. The right arm is united to the right side of the abdomen. Radius and ulna the only bones present. Left arm adherent to thorax as far as elbow. Hand clubbed, with rudimentary thumb and two rudimentary fingers. Head bullet-shaped. Ears rudimentary; right ear contained no meatus; left meatus enters petrous portion of temporal bone. Both superior maxillæ cleft. Palate cleft. Pharynx open, tongue rudimentary. Double fissure marks the position of the nose. Position of eyes marked by rudimentary eyelids, no trace of eyes being present. Trachea, thymus, thyroid, lungs, esophagus, stomach, spleen, pancreas, and liver, all absent. Umbilical vein entered directly the right auricle. Umbilical arteries normal origin from internal iliacs. Heart auricles well developed, and communicated freely. Right ventricle greatly hypertrophied. Left ventricle rudimentary, and opening into right ventricle. Entire length of intestine, 12 inches. At its blind end were two small kidney-shaped, glandular organs that weighed five grains each. Kidneys very large, 1½ inches by 1½ inches by ½ inch. Ureters as large as goose quills, emptied with intestine into a cloaca that occupied the normal position of the vagina. No trace of uterus or ovaries. Mesentery and peritoneum studded with little bodies like miliary tubercles. On opening the skull, I found the membranes firmly united together, and to them attached a thin layer of brain substance. Cavity filled with cerebro-spinal fluid. Basal ganglia represented by about thirty grains of brain matter. No olfactory or optic nerves. Spinal cord in cervical region about one-quarter inch in diameter, and pinkish in color.

Remarks.—This case is of special interest as well on account of the monster itself as for its bearing on the vexed question of the causation of hydramnion.

The specimen, while rare, is by no means unique. It possesses many of the characters common to the *acardiaci*—it is the product of twin or multiple pregnancy, the placenta is single, the twin is perfectly formed and is of the same sex. On account of the presence of the rudimentary heart, however, this monster cannot be referred to any one of the three types that are commonly described—amorphous,

acormous, and acephalous. It appears to represent a transition form between the common acardiac acephali and the acranii. Boutin ("Dissertation," Berlin, 1817) describes a monster with head, trunk, and lower extremities, and cystic degeneration of the skin, in which the thoracic viscera, the liver and stomach were absent. Orth (*Virch. Arch.*, 54, 1872) describes two cases of difform acephalus, in one of which a rudimentary skull, two rudimentary lungs, and a rudimentary heart were present. The heart contained two cavities filled with coagula of blood; one of these cavities received the umbilical vein. In a third case described by Orth, a large heart without lungs was present. Förster ("Missbildungen des Menschen") describes a similar case.

The mode of origin of these cases of fetal aplasia is still the subject of controversy. Unfortunately, in the case I present, the relation of the vessels of the umbilical cords as to anastomosis was not investigated.

As to the probable cause of the hydramnion in this particular case, I beg to make a communication on some future occasion.

II. AN EARLY ABORTIVE OVUM.

This specimen is chiefly interesting on account of its age and history.

Mrs. W., multipara. Last menstruation began April 4th, and lasted four days. The perineum was torn through into the rectum, and she was under treatment preparatory to an operation. Her physician made applications of tincture of iodine to the endometrium on May 1st, 6th, and 8th. Menstruation corresponding to May was arrested, but slight bleeding was observed after the last application of iodine on May 8th, lasting until May 17th, when I saw the patient for the first time. The ovum that I present passed, together with a blood clot, painlessly out of the uterus. If the statement of the husband can be relied upon, the probable age of the ovum is about twenty-one days. Its size supports this view.

Of course the physician who made the application was ignorant of the fact of pregnancy, even thought it impossible with such a perineal laceration. It is needless to say he is perfectly blameless.

THE PRESIDENT presented the histories of four cases.

I. A case of vaginal hysterectomy done some six weeks ago for persistent hemorrhage. All the usual methods had been resorted to for the purpose of controlling the hemorrhages, such as curetting the uterus, applying the various remedies, repair of the cervix, etc., without producing any effect on the amount of blood lost, or on the size of the uterus which was considerably larger than normal. So finally I advised her, since she had passed her 45th year and was really losing her life with this loss of blood, to submit to an operation for the removal of the uterus. A vaginal hysterectomy was performed, attended with a great many difficulties owing to the size of the uterus. After it was removed, the entire upper portion of the

body of the uterus was found to be in a condition of epitheliomatous degeneration.

Patient was discharged from the hospital, cured, June 15th, 1889.

II. A case of abdominal hysterectomy for a very large tumor which weighed about fourteen pounds immediately after removal. The case was of great interest, owing to the fact that examination of the tumor by myself and others left us very doubtful whether it contained fluid or not, or whether it was a single cyst or made up of a mass of cysts. Section through the abdominal wall showed a uterine tumor which had broken through the capsule at the upper end. It was particularly interesting to me for the reason that I met with the first accident I have ever had in my abdominal experience, of making an opening into the intestine. During this operation an opening was torn into one of the small intestines. I seized it immediately, and was sure that none of its contents escaped into the peritoneal cavity. After this delay I completed the operation. I used the extra-peritoneal method of controlling hemorrhage. This lady was in good condition till the fifth day, when she exhibited symptoms of obstruction of the bowel and died.

A post-mortem examination showed the wounded intestine to be completely closed; every suture was covered over except the end where the knot was. I have the piece of intestine and will show it. Not only did it hold gas, but, fastened to the hydrant, it held water. We found the left half of the pelvis, as divided by the elevation of the stump of the uterus from the floor of the pelvis to the abdominal walls, packed full of small intestines; and they were held firmly in that position by adhesions to the broad ligament. I do not believe this would have occurred if I had cauterized the stump of the broad ligament.

This is my fourth case of abdominal hysterectomy treated by the extra-peritoneal method, all of which have died.

III. A tubal pregnancy, about the third month, upon which I performed abdominal section. There had been quite a hemorrhage into the broad ligament. The tumor and the opening into the Fallopian tube were found without difficulty. I did not, however, find the fetus. The tumor consisted of the remnants of the placenta and amniotic sac. This all removed, I closed the opening of the cavity and packed the wound with iodoform gauze. The woman recovered.

IV. The sequel to an abdominal hysterectomy performed three years ago. The lady has had much trouble from the fact that the lower end of the wound did not close; six months after the operation quite a quantity of pus was discharged, and six months ago she had a serious difficulty caused by accumulation of pus and septic fever. Following that, a small abscess formed, and from this abscess one of the ligatures came out, two and a half years after the operation. The tumor was a large one, requiring a long incision, and the patient has quite a good-sized ventral hernia.

DR. JAGGARD.—In the case of tubal pregnancy, I would like to

ask whether there was a tumor that you could recognize by the vagina.

DR. PARKES.—Yes, sir; it was very easily recognized. She was a lady of slight build, so that it could be determined very readily by bimanual examination. The rupture occurred a few days before the operation.

DR. E. C. DUDLEY.—I desire to record

TWO CASES OF VAGINAL HYSTERECTOMY.

The first operation was January 9th, 1889. The patient was 58 years of age. The subjective indication was frequent and very profuse flowing, with intervals of very free muco-purulent (not fetid) leucorrhea, during the previous sixteen months.

Examinations of repeated scrapings from the endometrium discovered unmistakable evidence of cancer. After the removal of the uterus, this cancer was microscopically proved to have extended almost through the fundus uteri.

Although the patient had suffered for years from rupture and relaxation of the perineum, yet I slightly divided the perineum to get more light and space for isolation of the broad ligaments. Immediate closure of the perineum thus divided resulted in perfect union. Four weeks later, the patient had trouble in walking, from sagging of the pelvic floor, from cystocele, and from rectocele, and asked me to do perineorrhaphy.

Upon examination, a small, soft, friable protuberance in the perineal scar, about the size of a hempseed, led me to fear a return of the disease at this point. Consequently, after thorough disinfection of the vagina and external genitals, I excised the growth, taking with it a wide margin of healthy tissue all around, and, after having denuded sufficient surface to make a good perineum, completed the operation as a perineorrhaphy. The immediate object of the operation was explained to the family. The patient herself, however, still supposes that it was a perineorrhaphy pure and simple. The union was perfect, and the result was so satisfactory in the matter of support for the pelvic floor that she congratulates herself upon having persuaded me to close the perineum so soon after the hysterectomy. Upon examination of this little growth, Dr. Johnson declared it to be carcinoma.

The question arises whether this was the result of metastasis, a transplantation, or an independent growth. It could hardly be metastatic, because the vessels do not run in that direction. If it were an independent growth, it is probable that the conditions which produced it would have been active in other parts before this time. More likely it was a transplantation during the operation. This speaks strongly for scrupulous care in the cleansing of all wounds after the removal of cancer. According to recent reports, the patient is free from the disease.

The second hysterectomy was March 22d, 1889. Before the operation, the microscopic examinations by Dr. Johnson, and the subjec-

tive symptoms, were essentially the same as in the other case, except that no carcinoma was found. The microscopic evidences from repeated scrapings showed nothing more than adenoma. I removed the uterus on suspicion. Permanent hemostasis and closure of the peritoneal wounds were secured by means of lock forceps.

The following is Dr. Johnson's pathological report after examination of the extirpated uterus: "Cavity of body partly filled by mass of outgrowing mucous membrane consisting of long, slender villi covered with columnar epithelium. At the base of the new growth are found a few nests of irregular-shaped masses of polygonal epithelial cells packed closely together. In one specimen a mass of lymphoid tissue at some distance from the bases of the villi is seen, packed with epithelial cells similar to those last mentioned. *Diagnosis*: Villous adenoma, beginning carcinoma."

The patient recovered. At the present time she has no return of the disease, and is chiefly concerned in measures to counteract the too rapid accumulation of fat.

March 28th, 1884,¹ I presented to this Society, with the specimen, a case of ovarian tumor complicated with general miliary tuberculosis of the peritoneum. The entire peritoneum—parietal, intestinal, and omental, as well as that covering the tumor—was extensively involved in miliary tuberculosis. Both ovaries were cystic. The left ovary, which was removed, was quite large. The right ovary was the size of a hen's egg, universally and firmly adherent; was not removed, because the patient's endurance had already been nearly exhausted, and it was therefore decided to remove it by a subsequent operation, if necessary.

The patient recovered, but the drainage tube opening at the lower end of the wound never closed, and continued to discharge large amounts of ascitic fluid, which finally became purulent.

Last fall she was admitted to St. Luke's Hospital with an abdominal enlargement, the drainage opening still discharging a purulent fluid. Emaciation was extreme, the urine was albuminous, and her condition was in all respects so grave as to preclude the idea of an operation. She died a short time after admission. The post-mortem report by Dr. Frank Johnson, pathologist of the hospital, shows extensive degenerative changes of the abdominal and pelvic organs, probably consequent upon long-continued suppuration. It is now evident that both ovaries should have been removed four years ago.

DR. PARKES.—I would like to ask whether there was any general enlargement of the body in the hysterectomies.

DR. DUDLEY.—Considerable, but not so much as you spoke of. There was probably fifty or seventy-five per cent of enlargement.

DR. PARKES.—I would like to say that in making up these reports I shall refer definitely to what I do not remember now with reference to the report of Kaltenbach, of Halle. He reports seven cases

¹ Journal of the American Medical Association, April 17th, 1884, page 434.

of vaginal hysterectomy for what he calls corpus carcinoma or malignant adenoma originating in the mucous membrane of the body of the uterus, some three or four with no external evidence of trouble; and he removed the uterus because all other methods of controlling bad hemorrhage had failed, and in all of these cases he found the same degeneration, commencing perhaps about the Fallopian tubes and then spreading up over the fundus so as to join in the mid-line, there being less manifestation of the disease in the mid-line than on the sides towards the Fallopian tubes.

DR. DUDLEY.—In the second case of vaginal hysterectomy, I should say the uterus was about as large as the one described by Dr. Parkes; it was brought through the vaginal outlet with great difficulty.

DR. PARKES.—Kaltenbach says that you have as a complication this enlargement of the body of the uterus, and that in cases of senile atrophy of the vagina the removal of the uterus may become exceedingly difficult or even impossible.

DR. DUDLEY.—The indication sometimes narrows itself down to the question whether the uterus or the ovaries and tubes should be removed in a case of intractable uterine hemorrhage. If there are scrapings from the uterus, and if these scrapings turn out to be adenoma under the microscope, and they return promptly after removal, then I should fear carcinoma, present or prospective, and should be disposed to remove the uterus. If, on the other hand, it be not possible to get much out of the uterus by repeated curettings, the probability is against carcinoma as a cause of the hemorrhage, and the removal of the appendages would be preferable to the removal of the uterus. The malignant tendency of adenoma—that is, its disposition to eventuate in cancer—is abundantly shown by the observations of Breisky, Schroeder, Winckel, and others.

DR. PARKES.—I think this point might be important to remember with reference to it: accompanying enlargement of the body of the uterus. With reference to the point raised of removing the uterine appendages in preference to the uterus, where nothing was found from the curetting, if this was supported by the small size of the uterus it would make the conclusion stronger.

DR. DUDLEY.—The enlargement of the uterus might be from myoma; then the hemorrhage would be relieved by the removal of the appendages. But if scrapings from the interior of the uterus show adenoma, be the uterus large or small, then the patient may be losing valuable time until that uterus has been removed.

DR. PARKES.—I should dislike to be placed on record as saying anything against the pathologists, but I think they would be placed in a very bad box without a full history of the case, and the symptoms and circumstances surrounding the case, before the operation.

DR. BAYARD HOLMES.—Mr. President, I would like to speak of Dr. Parkes' case in which the suppuration continued so long after the operation, and to say that I believe it is typical. There was in that instance an infection of some one of the sutures, which I understand were of silk. It makes no difference how small an amount of infection gets into a solid, spongy material like a piece of silk; cells do not migrate into the silk suture far enough to drive out the infection and as it were granulate it off, and, therefore, when the least end of a buried silk suture becomes infected it is only a matter of time when the colonization of the whole suture will take place. In the tissues surrounding the suture granulation tissue will appear, and a coagulation necrosis of the wall of this sinus will cause a collection of pus to appear at the point of least resistance. In this way

the whole of the suture may at last be discharged. But if one suture is attached to another, and another, and another, and so on, the whole line of sutures will eventually become infected; and if they are assisted by a good flow of pus they will probably be washed out; but if not, they may remain for an almost indefinite time, and the suppuration which follows in the track of these sutures may produce the same effects upon the kidneys and liver that we find in protracted suppuration of bone.

DR. HOLMES.—Since I occupy the position of pathologist to this Society, at least for a time, I do not like to have anything said that would lead one to suppose that a pathologist could find carcinoma if a sufficient inducement was offered him. The recognition of typical carcinoma is easy enough; but if a surgeon removes a portion of tissue half as big as a pea, and presents it to a pathologist for examination, it is presumptuous to suppose that the pathologist can examine that little, delicate piece and decide by it whether the uterus contains carcinoma or not. I want to say that a proper diagnosis depends as much upon the operator who removes the tissue as upon the pathologist. It would be wise under all circumstances to have him present at the operation. A little scrap is not enough; you want all the scrapings, and you want to know which ones come from the fundus and which from the cervix.

DR. DUDLEY.—The uterus need not be much increased in size to be carcinomatous. In the first of the two cases just reported, the uterus was not very much enlarged, but the carcinoma was unmistakable. I do not wish to be understood as saying that I should always remove the uterus if adenoma were found in the scrapings; but if it returned promptly after curettement, and the hemorrhage did not cease, that would be diffuse adenoma and would be strong evidence of great danger from cancer.

DR. DUDLEY.—I can indorse what Dr. Holmes has said. I have had occasion to employ pathologists to examine specimens, and wherever it has been possible to verify the examination it has always been found correct. In this case examined by Dr. Johnson, nothing was found in the first scraping; curettement was repeated and many more scrapings examined. Dr. Johnson spent days of time in looking through large numbers of slides, but reported that he could find nothing more than adenoma. I said to him that I would advise the uterus to be removed anyway, when he asked me for a little more time. He examined many more slides and finally found absolute evidence of carcinoma. Then the uterus was removed and the diagnosis verified beyond a doubt.

DR. H. P. NEWMAN.—I would like to ask if in the first case stated there was any curetting done.

DR. PARKES.—Yes, sir.

DR. NEWMAN.—Was there any diagnosis made?

DR. PARKES.—No, sir.

DR. NEWMAN.—It occurs to me that this history might throw some light upon those cases of obstinate uterine hemorrhage where the source of the flow is obscure.

At the November meeting, Prof. Jackson reported four such to this Society, in each of which not only were the usual methods of treatment unavailing, but the exact source of the hemorrhage could not be determined. It was suggested at the time by one of the members present that incipient fibroid or carcinoma might be the cause, notwithstanding there was no clinical evidence of such a growth. As I understand Prof. Parkes, in his case there was ab-

solutely nothing whereby he could trace the source of this continued and profuse bloody discharge.

In reference to the other case, where suppuration extended over such a length of time, I have an instance in mind where possibly the theory advanced by Dr. Holmes might be substantiated.

It was an ovariectomy where three or four catgut sutures were used in the abdominal wound, alternating with as many of silk.

The case progressed favorably up to about the fifth day, when suppuration occurred in the course of each of the catgut sutures, avoiding the track of the silk sutures, but ultimately affecting the entire abdominal incision.

The infected wound suppurated profusely for two or three weeks, finally healing by granulation.

This case showed conclusively the source of infection, i.e., the catgut, and possibly goes to prove what Dr. Holmes says of sepsis being washed away by a profuse flow of pus.

DR. T. J. WATKINS presented an inaugural thesis, entitled
CONCENTRATED SOLUTION OF MAGNESIUM SULPHATE AS AN ENEMA,
WITH SOME POINTS RELATIVE TO THE PHYSIOLOGY OF THE ABDOMINAL CIRCULATION.

DR. J. H. HOLLISTER presented the following paper, entitled

NOTES ON ACUTE INVERSION OF THE UTERUS.

It is a matter of record that the uterus, whether gravid or unimpregnated, may become partially or completely inverted. The first and obvious necessity to this result is a very material enlargement and *distention* of this organ. This may result either from the development of a fetus or from the growth of a tumor in utero. In a uterus thus distended, I have the conviction that inversion would not occur spontaneously, that is, from simple rhythmical contraction of its own muscular structure; yet I am not aware of the teaching of authorities upon this subject. It seems highly probable that *force* must be applied to the fundus of the uterus to accomplish its inversion. This may doubtless occur, independently of any manipulation by an attendant, by the simple gravitation of a pendulous tumor or by an adherent placenta, as the latter may be partially discharged into the vagina, and, being adherent, drag a distended fundus after it. A more obvious and doubtless more frequent cause for such displacement is that of undue traction upon the umbilical cord while as yet there has been but partial detachment of the placenta. This last may be associated with undue pressure upon the fundus at its superior portion, applied by hand pressure upon the abdominal walls.

The inversion, judging from the phenomena presented by partial inversions, commences by an infolding of the fundus more and more to the uterine cavity, the advancement of this involution to the cervix, then through the os into the vagina, and, when completed, the organ emerges through the vulva and hangs like a pendulous pyriform tumor with its walls reversed.

The striking similarity which occurred in two cases which I have

carefully examined leads to the conclusion that when the uterus is thus completely inverted the os is no longer discernible, but that in its place we have an inverted cervix, giving a band-like feeling and not difficult of distention.

While the uterus remains in this condition, there seem to be two important facts present to which it may be well to call attention.

The first is the entire loss by the organ of the power of either rhythmical or tonic contraction. The atony of the viscus is as complete as though it contained *no* muscular fibres. Any amount of manipulation of the inverted organ does not seem to stimulate its contraction. So far as such contraction is dependent upon ganglionic stimulation, this seems for the time to be completely arrested. The application of ice to the inverted walls does not seem to cause muscular contraction. The function of sensation seems also arrested, for both of my patients were unconscious of pain from simple pressure or manipulation of the organ, while in one case there was marked adherence of the placenta over quite an extended surface, requiring considerable digital manipulation for its separation.

The second marked feature in each of my cases was this: After complete inversion, there was almost no hemorrhage from the uterine walls, and it was only after reduction had been nearly accomplished that the hemorrhage became troublesome.

As to the frequency with which the accident occurs, I am led to believe it to be exceedingly rare. This I conclude, not from my own experience alone, but also from the urgent desire of one of your number that my cases should be matters of record. His solicitation is the explanation of my presence to-night and of the preparation of this paper.

The histories of the two cases which have fallen under my personal observation can be stated in few words:

CASE I.—Mrs. P., American, aged 24 years, well formed, spare in figure, in moderately good health, and of active habits; married one year; first confinement. The patient was in labor for ten hours, and gave birth to healthy, well-formed babe weighing eight and one-half pounds. There was no unusual hemorrhage. The cord was tied and the babe removed.

This was during the second year of my experience in the practice of obstetrics, but I had been instructed with *great emphasis* by my college professor in obstetrics to preserve as far as possible "a harmony between the uterus and its contents." Being thus forewarned, I am confident that I did not exert undue pressure upon the abdominal walls, nor did I detect *partial* involution. With some degree of traction upon the cord, still the placenta was not delivered. Holding the cord with moderate tension in my left hand, I explored the vagina with my right and found the placenta partially protruded through the os. Gathering this more and more into my hand, and with considerable traction, it gradually descended, until suddenly it protruded in a large mass external to the vulva. In endeavoring to

remove the placenta, I found it still adherent to a tumor half as large as the infant's head and pyriform in shape. I soon took in the situation as one of inverted uterus.

The fact, as I have before stated, that there was no considerable hemorrhage came greatly to my relief. I found a portion of the placenta—it seemed to me as large as the palm of my hand—still so adherent to the uterine wall that it required to be picked away segment by segment with my fingers and with some degree of force; and still during this process of separation there was almost no hemorrhage, showing that in this condition, by compression, the supply of blood to the uterus had been nearly cut off.

At this juncture I was able to summon to my assistance a neighboring physician, Dr. Shepard, of Grand Rapids, Michigan, a man fertile of expedients in emergencies, and who had had an extensive experience in midwifery, and to his superior skill I committed my case.

Efforts at reduction by simple pressure into the vagina were soon to him unsatisfactory. He then drew the organ out as fully as safety would permit, and then by digital manipulation commenced the evolution of this inverted organ. He was able to accomplish this, to a considerable extent, while the uterus was still external. Next, inserting the end of a round ebony rule an inch in diameter into the indented fundus, and still holding the cervix as securely in his left hand as possible, he gradually accomplished the reduction, and, as the fundus began to recede in the upward direction, carried it more rapidly upon the point of the instrument fully up to its normal position. In a few moments the outline of the womb could be detected above the pubes; it again resumed moderately strong rhythmic contractions, came down to normal position without any excess of hemorrhage, and the patient made a good recovery without any untoward symptoms, and was afterwards the mother of other children.

CASE II.—Mrs. G., American, of Swedish extraction, aged 23 years; housewife, of active life, and moderately spare in habit; married and first confinement. I was called by Dr. J. H. Bates, of this city, to see this case in consultation in 1888.

The confinement had been one of moderate severity, but not at all complicated.

Dr. Bates has been long in practice, and was not aware of using more either of pressure or of traction than he was wont to do in such cases. Upon lifting the placenta from the vulva, he discovered the projecting pyriform tumor of the uterus inverted.

His patient living near my residence, I was soon at his side. Improvising an instrument similar to that which I had before seen used, I lost no time in endeavoring, in like manner, to accomplish a partial reduction with my fingers, and then to apply pressure as near as possible along the long axis of the uterus and the vaginal canal. Such was the extreme mobility and flaccidity of the parts

that I was unable to maintain pressure in the needed direction to the uterus, and I was continually foiled by its partial lateral flexion in the vagina, rendering pressure with the instrument useless. Again I brought down the uterus as far externally to the vulva as seeming safety would permit, and again, by pressure with my fingers in the form of a cone upon the centre of the fundus, began its involution. Continuing this pressure with my right hand, and controlling the cervix as long as I could in my left, I found the dilatation of the cervix gradually permitting the passage of the fundus with my right hand still engaged in it. With but little resistance, the organ was carried fully up to the region of the umbilicus, its walls perfectly flaccid, and maintained in position by my closed hand in utero. At this point the organ had not recovered its power of contraction, but I began to encounter pretty severe hemorrhage. Friction over the abdomen was met by no response of uterine contraction, and no outline could be discerned through the abdominal walls. In this emergency I was supplied with a good-sized linen handkerchief. In the centre of this a lump of ice twice as large as a hen's egg was placed. The corners of the handkerchief were twisted tightly down upon the ice, forming a very satisfactory handle. The right hand was slightly withdrawn down the vagina, the flaccid uterus following and bleeding profusely. The ice was carried up beside the wrist of the hand still well up in the vagina, until I had control of it in the partially flexed palm of that hand. The uterus was again carried fully up to its position, and contained, besides clotted blood, my hand and a fragment of ice at least an inch and a half or two inches in diameter. I reasoned that in this way I might accomplish, if at all, stimulus by distention. Holding my hand steadily in this position, I made gentle pressure with the left hand upon the abdominal walls, and almost immediately had the satisfaction of detecting rhythmical contraction. Soon this was more and more established. The hand was gradually withdrawn with the clot and ice as the uterus closed down upon it. The ice was engaged and kept at the cervix, and very perceptibly aided in stimulating its contraction. A few minutes later the uterus had accomplished normal involution. Its natural contour and position were evident by palpation above the pubes externally. The hemorrhage had nearly ceased; the hand was withdrawn with the ice now nearly melted; the vagina cleansed of coagula: the crisis was passed, and, though the patient had lost considerably from hemorrhage, she did not seem unduly exhausted, and the heart action was satisfactory.

I was informed later by Dr. Bates that, though he had enjoined the utmost care as to overexertion of any kind, when he made his visit on the fourth day after her confinement, at an unexpected hour, he found her sitting at table with her family and serving the tea.

DR. DUDLEY.—Would you remove the placenta before reduction of the inversion? The reason I ask the question is because con-

traction of the uterus while it is inverted is not favorable to replacement, and handling the uterus as much as one would need to in detaching the placenta might make it contract and increase the difficulty of replacement; consequently it has been the practice of many to replace the uterus with the placenta still attached.

DR. PARKES.—I would certainly expect that, with a placenta as large as that body usually is, it would increase the difficulty to return the uterus with the placenta in position.

DR. DUDLEY.—The plan has been indorsed by good obstetricians. There is one case on record in which the uterus became inverted in a woman, who had not been pregnant for years, while she was rolling ninepins.

DR. E. J. DOERING.—I think if we use any traction at all on the cord in delivering the placenta, one hand should hold the uterus firmly, so that the slightest inversion could be detected.

DR. PARKES.—In listening to this paper and the criticisms that have been made upon it, I think it would be well for us to bear in mind the fact that the uterus may become extruded, that is, inversion may take place without any assistance on the part of the physician or any attendant of the patient. I think there are quite a number of instances on record besides these interesting cases to which we have just listened, notably in the article by Dr. Reeves to which reference has been made, and especially from the pens of the Dublin obstetricians. Personally I have had one experience with reference to it. Several years ago, when in obstetrical practice, I was engaged to attend a lady. Her labor came on rather unexpectedly, and it was so rapid and easy that no one was present, and it was not thought necessary to send for any one. The thing that excited their desire to have a physician was the fact that the after-birth did not come away as it should have done, and she was bleeding; so I was called an hour after delivery, and I found the uterus absolutely inverted, with the placenta attached to it, in the vagina. No one touched the woman, no medical attendant or midwife. The inversion was complete. I detached the placenta and had no difficulty in returning the uterus to its normal position. The lady is now living.

DR. DUDLEY.—Would you detach the placenta and return the uterus, as a general practice?

DR. PARKES.—I think so; it would be better to return it without the placenta than with it.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Wednesday, October 2d, 1889.

The President, A. L. GALABIN, M.D., in the Chair.

Report.—A report was read on Mr. Stewart Pollock's specimen of Dermoid Ovarian Tumor from a mare, exhibited before the Society in July.

Specimens.—DR. WILLIAM DUNCAN exhibited: (1) a Dermoid

Ovarian Tumor; (2) an Ovarian Cyst; (3) Pyometra and Pyo-salpinx, with Suppurating Kidney and Thrombosis of the Renal Artery, from a patient subject to syphilitic disease of the rectum. DR. J. PHILLIPS showed some Blue Urine from a case of cyanuria. DR. CULLINGWORTH exhibited a Hemato-salpinx from rupture of a varicose vein in the Fallopian tube. MR. WOODLEY HYMAN brought forward an Acardiac Fetus with Rudimentary Heart; DR. J. SHAW, a Uterine Douche.

DR. G. ERNEST HERMAN read

A CONTRIBUTION TO THE ANATOMY OF THE PELVIC FLOOR.

In this paper measurements are detailed which show the great normal variations in the conformation of the parts which form the floor of the pelvis. It is shown that the projection of the pelvic floor varies from nothing to as much as two inches, and that in healthy nulliparæ the distance between the coccyx and anus, the length of the perineum, the distance between the fourchette and the symphysis pubis, and the length of the vagina, are subject to wide variations. It is pointed out that since these variations exist in healthy nulliparæ, peculiarities observed in parous women should not be assumed to be changes due to child-bearing, unless it has been ascertained that they were not present previous to pregnancy. The clinical importance of these anatomical variations, in their bearing on the liability to rupture of the perineum and to prolapse, the adjustment of pessaries, and some forms of dyspareunia and sterility, is pointed out.

DR. HERMAN also presented a paper on

THE CHANGES IN THE PELVIC FLOOR WHICH ACCOMPANY THE SLIGHTER DEGREES OF PROLAPSE.

He describes the descent of the pelvic floor which takes place during effort in health and is morbidly increased in prolapse. Measurements are given which show that this descent in health probably does not exceed three-quarters of an inch. This descent takes place partly by stretching of the sacral segment of the pelvic floor in an antero-posterior direction, and partly by its recession downward and backward from the symphysis pubis, a movement which implies transverse stretching. In the antero-posterior-stretching, the perineum and the part posterior to the anus take part to about the same proportionate extent. This normal descent of the pelvic floor is accompanied with descent of the uterus into the vagina to the extent of about five-eighths of an inch. These changes may be morbidly increased and their relative extent morbidly altered. The descent of the pelvic floor may exceed two inches. This morbid increase of descent of the pelvic floor may be present without increased descent of the uterus into the vagina. In other cases, it may be accompanied with descent and protrusion of the anterior segment of the pelvic floor, with or

without the uterus. In such cases, when a protrusion at the vaginal orifice has taken place, further effort increases this protrusion, but does not increase the descent of the sacral segment of the pelvic floor. Backward displacement of the uterus is often present without more descent of the uterus or of the pelvic floor than is present in most healthy women; but in most cases of backward displacement of the uterus, the descent of the uterus and pelvic floor is increased. Backward displacement of the uterus is not associated with shortness of the vagina.

Although the symptoms of descent are usually relieved by suitable mechanical support, yet the amount of descent of the uterus or of the pelvic floor is not the measure of the severity of the symptoms. There may be symptoms with slight descent in some patients; much descent without symptoms in others; and in the same patient the symptoms may be present at one time and absent at another, although the amount of descent has not varied; showing that the symptoms are conditioned more by the state of the nervous system than by the local mechanical changes.

DR. GRAILY HEWITT considered that Dr. Herman deserved much credit for his analysis of the phenomena observed in cases of slighter degrees of prolapsus. The subject was of vast importance, for the effects of so-called minor displacements, though not dangerous to life, destroyed all enjoyment of it. The patient's sufferings often become intensified so that in later years serious impairment of the uterine functions followed neglect of the symptoms of minor displacements in their earlier stages. Dr. Hewitt was glad to find himself in agreement with Dr. Herman on many points in reference to descent of the uterus and its effects in producing suffering. He believed, however, that in these cases the principal cause of the suffering was the exaggeration and intensification of the version or flexion of the uterus more frequently associated with descent of that organ. Descent of the uterus, pure and simple, was rare; but descent accompanied with flexion or version was very common. In estimating the effects of the displacement, it would be necessary to find out how much of the suffering was due to the mere descent, and how much to the increased flexion or version. So far as backward displacement was concerned, Dr. Herman noted that descent was thereby increased. Nothing had been said about ante flexion. Dr. Hewitt believed that ante flexion not yet rigidly set in that shape, the uterus being still fairly movable, might be regarded as not abnormal. The case was quite different when the organ was sharply bent forward, the fundus low down, and the uterus firmly resisting alteration of shape and position. Dr. Herman noted several cases of cystocele. In these cases the ante flexion was probably an important causative element. Descent of the pelvic floor was chiefly important because it brought about increase of flexion and consequent increase of discomfort.

DR. HERMAN regarded ante flexion as one of the natural shapes which the uterus might assume. He had investigated the frequency of ante flexion in the healthy uterus, and laid the results before the Society (Transactions, vol. xxiii.). Vedelen had made a similar research with substantially the same result, namely,

that acute antelexion was very common in health. No one else had investigated the question. Backward displacements caused symptoms in but a small minority of cases; not by any effect of the bending of the uterus, but by the torsion of, and pressure on, the broad ligaments, which returned the blood from the uterus. In a case described that evening, a patient was kept for two months in hospital, and all her symptoms went away; yet the retroflexion remained exactly as it was on admission, showing that it was not an important feature of the case.

REVIEWS.

DISEASES OF WOMEN. A Manual of Non-Surgical Gynecology, designed especially for the Use of Students and General Practitioners. By F. H. DAVENPORT, A.B., M.D., Assistant in Gynecology, Harvard Medical School; Assistant Surgeon to the Free Hospital for Women; Physician to the Department of Gynecology, Boston Dispensary. 105 Illustrations; pp. 312. Lea Brothers & Co., Philadelphia, 1889.

After a careful reading of this excellent little work, we think that its excuse for being, its scope and aim, cannot be better or more accurately defined than has been done by its author in his modest preface. While, with the present multiplicity of gynecological treatises and text-books, it may well be questioned what useful purpose a new one can serve, it seems to us that this one fills a space occupied by no other.

The work is not too ambitious, is not written as a text-book or for the specialist, but as an aid to the general practitioner in understanding and rationally treating the less serious gynecological cases met with in daily practice. It gives only the elementary principles of the methods of examination and simple forms of treatment of the more common gynecic affections. Surgical methods, except the simplest procedures, have been omitted. Pathological anatomy is not considered. Prominence is given to diagnosis and treatment, which are discussed in a brief but clear manner, the latter being confined to such measures as the author's practical experience has shown him to be of the greatest benefit.

Considering the purpose of the book, Dr. Davenport has succeeded admirably in accomplishing his end. With much to praise, there are only a few minor points open to adverse criticism or discussion.

W.

A TREATISE ON THE SCIENCE AND PRACTICE OF MIDWIFERY. By W. S. PLAYFAIR, M.D., LL.D., F.R.C.P. Fifth American from the seventh English edition. With notes and additions by ROBERT P. HARRIS, M.D. 670 pages, with 5 Plates and 207 Illustrations. Lea Brothers & Co., Philadelphia, 1889.

Four years ago, in the November JOURNAL appeared a notice of this well-known and favorite work, in which its popularity is dwelt on and the prediction made of many successive editions, and this because its author is recognized as safe, thorough, and

progressive. The chief change in the seventh English edition, from which the present American edition is taken, is in the introduction of the system of obstetric nomenclature favored by the International Medical Congress of 1887, which it is to be hoped will eventually be generally adopted and lead to something like uniformity in obstetric description. Besides this, the chapters on conception and generation and on puerperal septicemia have been carefully revised and several new plates and illustrations added.

The learned American editor, to whom the work owes so much of its success here, has added many new notes on various points, and in particular has brought the work up to date in the statistics of the various Cesarean operations, giving some very interesting conclusions. Thus, the mortality of the Porro operation has fallen from 58 to less than 20 per cent since 1884, and that of the improved Cesarean section from 45 to a general average of 20, and for Continental Europe of 12 per cent; while laparo-elytrotomy, which attracted so much attention four years ago, has by reason of this diminished mortality almost ceased to exist, it not having been performed since September, 1887. The exsective method of treating extra-uterine pregnancy where the fetus is viable had been performed but once prior to 1885, but now has a record of five cases with no maternal death. In this series of figures can be read the tale of earlier operation, of more perfect technique, and of more careful asepsis. W.

OBSTETRIC NURSING. By THEOPHILUS PARVIN, M.D., Professor of Obstetrics and Diseases of Women and Children at Jefferson Medical College; Obstetrician to the Philadelphia Hospital. Pp. 96. P. Blakiston, Son & Co., Philadelphia, 1889.

This little book contains the lectures recently delivered by the author to the pupils of the Philadelphia Hospital Training School for Nurses, together with the addition of an appendix wherein are considered certain important matters not otherwise mentioned.

It is written in the author's well-known happy style, and, while giving clearly and pleasantly the instruction necessary in the many emergencies of the nurse's duty, it does not at all intrench on the field properly occupied by the physician. We would particularly commend those paragraphs treating of the ruling of the nurse's tongue; the physician himself might sometimes benefit from their words of counsel. W.

GYNECOLOGICAL ELECTRO-THERAPEUTICS. By HORATIO R. BIGELOW, M.D., Member Amer. Med. Assoc.; Fellow of the Brit. Gyn. Soc.; Member of the Anthropological and Biological Society of Washington, D. C. With an Introduction by DR. GEORGES APOSTOLI. 32 Woodcuts; pp. 196. J. B. Lippincott & Co., Philadelphia, 1889.

Beginning with an introduction by Apostoli, the work itself is essentially a translation of certain of his previously published papers, together with a few pages of concise notes by Bigelow on electric laws, currents, and instruments.

The peculiar views and methods of Apostoli have been so widely studied and discussed that any extended reference to them here becomes unnecessary.

To those who wish for an accurate statement of his views, and

who cannot read his papers in the original, we commend Dr. Bigelow's translation. w.

TRANSACTIONS OF THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. Volume I., pp. 318. Caldwell Printing Co., Birmingham, Ala., 1889.

This maiden volume contains the text of the thirty papers read at the first meeting of what promises to become one of the most influential of the Southern medical societies.

The subjects of the papers cover many interesting surgical questions, certain of which must have led to animated discussion; this, however, has been necessarily omitted from the volume, owing to the inexplicable absence of a competent reporter. We trust that the coming year will see this defect made good. Parts of several of the more important gynecological essays have already appeared in this JOURNAL. See volume for 1889, pp. 154, 218, 219, 247. w.

ABSTRACTS.

1. Doleris: Modification of Alexander's Operation (*Nouv. Arch. d'Obstét. et de Gynéc.*, February, 1889).—This is applicable to cases in which the ligaments are too thin to promise the proper degree of support to the replaced uterus without vaginal tampons.

The steps of the operation are: (1) As short an incision as possible on either side, starting from the spine of the pubes and parallel with the crural arch. (2) Finding the ligaments. (3) Replacement of the uterus and uncovering of the ligaments for the required distance. (4) Instead of the usual fixation to the abdominal wall, the right ligament is fixed to the pillars of the external inguinal ring by three sutures, the lowest and most internal corresponding to the insertion of the pillars on the pubes. After suturing, there remains a free stump, six or seven centimetres long, at the internal angle of each wound. The stump of the right ligament, after having been cut at its pubic insertion, is seized by a forceps introduced from the left end of a subcutaneous incision, uniting the two wounds, and brought into the left incision. The left ligament is sutured to its corresponding pillars, the stump is resected as much as necessary and its end then brought into contact with and sutured to the vivified end of the right ligament.

The internal adherent portion of the right ligament is sutured to the corresponding pillars of the ring, while the free portion is cut and brought through a subcutaneous canal to the left cut ligament (already sutured to the pillars), and the ends are then united. N.

2. An Analysis of Thirteen Hundred and Twenty-two Recent, Unselected American Laparatomies (*Pittsb. Med. Rev.*, Sept., 1889).—The abdominal sections here summarized comprise the consecutive work of eighty-two operators, all the operations having been performed during a period of three years beginning January 1st, 1886. These operations are not the entire work of all these surgeons during the three years; but they are in every case consecutive operations, no selection whatever having been made. They are all authentic reports, having been in every instance received from, and published

with the consent of, the operators themselves. It is, therefore, believed that they may be taken as a fair representation of the status of abdominal section in this country during the period of three years which closed in December last.

Several facts of great interest are made apparent by the analysis. The general mortality of laparotomy for ovarian and parovarian tumors was 14.7 per cent, and that of the sections for removal of ovaries not the seat of tumor was but 7 per cent. Notwithstanding the present consensus of opinion against the tapping of ovarian and parovarian tumors, certainly 61, and probably more, of the 491 cases had been tapped prior to operation. The increase in mortality, however, of the cases that were tapped was less than 2 per cent over those not tapped. The somewhat surprising fact is noticed that of the 48 tumors of long standing (from four to thirty years) but 3 operations proved fatal. This is probably to be accounted for by the absence of malignant cases. That the removal of the second ovary in case of tumor does not increase the danger is shown by the fact that of 310 cases in which the second ovary was left the mortality was 15.5 per cent; whereas of 158 cases in which the other ovary also was taken the mortality was but 11.4 per cent.

The mortality after removal of non-adherent tumors was 8.2 per cent; of tumors with moderate adhesions, 11.1 per cent; and of tumors with grave adhesions, 20.9 per cent.

The mortality in private hospitals was 11.8 per cent; in private practice, 18.5 per cent; and in general hospitals, 20.7 per cent.

Of the 899 operations for removal of ovaries not the seat of tumor, there were but 25 in which a pathological condition is not noted, and it possibly existed in some of these. This shows a laudable disinclination to report oophorectomy for symptoms only. The reports of these operations for nervous symptoms make an unexpectedly favorable showing; those for hysterolepsy being 5 cured and 4 improved, in nine cases. The time, however, that elapsed from operation to report was necessarily rather short to assure permanency of result.

The cases of simple exploratory incision had a high mortality—12 in a total of 84 operations. The hysterectomies showed 21 deaths in an even 50 cases, and, eliminating the work of a few of the more successful operators in this line, this fatality would be very largely increased. The mortality of section for shot wounds of the abdomen (20 cases shown) is 85 per cent; that of section for stab wounds (12 cases) is 50 per cent.

Of the 432 laparotomies for other purposes than removal of ovaries, the mortality was 32 per cent; so that the devotees of abdominal section cannot yet boast of its perfectly innocuous character. Of the 1,322 laparotomies recorded, 668, over one-half, were done by eight operators: Joseph Eastman, John Homans, Howard Kelly, William T. Lusk, M. D. Mann, Paul F. Mundé, Joseph Price, and W. Gill Wylie.

3. Kleinwaechter, Ludwig: Contribution to the Diagnosis and Treatment of Cystic Fibroma of the Uterus (*Wiener Med. Presse*, XVI. XVII.).—Cystic fibromata of the uterus are rare growths; still more rarely are they diagnosticated because of their very close resemblance to ovarian cysts. Those rare cases diagnosticated are those in which the development and growth of the tumors may be early recognized and watched. The author gives a detailed history of a case which he had under observation for a long time, and upon which he finally operated, removing a great mass weighing from two

and a half to three pounds and containing about one to one and a half quarts of fluid ; neither the solid nor cystic portions of the growth were very vascular, and the operation, which lasted nearly two and a half hours, was almost bloodless. The first time K. examined the patient the symptoms and findings corresponded to fibroma. Forty-five weeks later, at the second examination, the picture had changed : the uterus was somewhat enlarged in toto, but this time a fluctuating tumor was present in its left horn, which had developed in the interval. The ovaries were found unaltered both at the first and second examinations. At the third examination the parts were again entirely changed. The uterus and its left horn, which formerly made two distinct masses, were now merged into one large fluctuating tumor, superficially very much like an ovarian cyst. At the last examination he not only could confirm his diagnosis, but was enabled to make out that the cystic degenerated portion of the fibroid had its seat in the left horn of the uterus. He did not make use of the sound in arriving at a diagnosis—he did not consider it necessary ; nor was he oblivious of the fact that a similar growth had been punctured with a sound in the hands of Spiegelberg. Altogether the patient was under observation for about one year and a half. A rapid increase of the volume of the tumor was noted, similar to the reports of other typical cases. There was very little bleeding from the tumor ; the menstruation was more profuse and protracted, but never amounted to hemorrhage. Serous discharges also took place, followed by transient diminution in the size of the growth. K. surmises that these periodic discharges of watery fluid would point toward a lymphangectatic character of the fibroid. As cystic fibroma grows much more rapidly than fibro-myoma, and has a greater tendency toward decomposition, operative interference is the more urgently indicated ; the latter now generally consists of removal through the abdomen, but K. considers removal by way of the vagina, as he did in his case, the more safe and conservative.

L. R.

4. Fritsch, Heinrich : The Simplification of Cesarean Section (Centralbl. f. Gyn., XXIII.).—During one operation, F. removed the rubber ligature after making the suture through the muscular tissues, in order to allow the circulation to be restored to the parts ; he was surprised to note that even before the application of the serous suture there was no escape of blood ; that, in fact, if the serous sutures were made for hemostatic purposes, they were superfluous. He inserted the sutures in this and another case, however, partly from usage and partly because of a fear that with the involution of the uterus the muscular sutures might become lax and allow of the escape of blood. At this time he performed a number of enucleations for myomata of the uterus, in which the walls of the uterus were almost as vascular as when the organ was gravid ; the results showed that the capsules of myomata and uterine wounds of greater size than in Cesarean section may be united and sunken without fear of secondary hemorrhage, oozing, or sepsis. He is determined to profit by the lesson taught by these enucleations, and in his next Cesarean section will omit the serous sutures on principle. When Cesarean section is performed at a time when no other attempts at delivery have been made and no fever is present, the uterine cavity is self-evidently aseptic ; irrigation or the application of iodoform under these circumstances is not called for. The uterine wound will not be affected by the lochia, and this fact removes the reason for being careful to avoid the decidua in entering sutures ; the decidua is as aseptic as the muscutura ; time and pains are saved if the needle is

pushed directly through all structures; this also procures more perfect coaptation of the parts, and greater strength of the united wound is obtained by taking up more tissue. With the old way of piercing immediately at the sharp edge of the wound below the decidua, it can readily happen that a vein in a portion of the placenta cut through might not be included in the suture, and therefore remains open; hemorrhage is more rapidly checked by this means. The sutures should enter about 1 cm. from the edge of the wound on the outside and about 0.75 cm. on the inside. He gives the history of two cases in substantiation of his views. Of course the suture must be of the interrupted character, and the stitches should be no more than 1 cm. apart, and for the inexperienced it will be better to use silk instead of catgut. Should the wound gape somewhat between two stitches, it does not matter unless it bleeds, as it lies in a position where it will be compressed. L. N.

5. Martin, A.: On the Alcoholic Treatment of Puerperal Fever (*Berliner Klinik*, XVI.).—Knowledge of the nature and prophylaxis of puerperal fever is now so universal that the subject occupies a place of secondary interest to the physician. Its treatment, on the other hand, continually offers new difficulties. The local treatment, once so popular, has fallen into disrepute; many practise a simple symptomatic treatment. Alcohol plays an important rôle in the means adopted to control the fever and the general infection. Breisky was the pioneer in this method. The procedure did not meet with general favor, and the subject is sadly neglected in text-books and current literature. Breisky considered alcohol an antipyretic; Runge sees in it a remedy toward making the system invulnerable and to lessen fever, and recommends in addition to it general baths for the lying-in women. The author's experience with the substance differed from B.'s and R.'s in that, while they practised its administration early in the course of the disease, in the great majority of cases he had not been enabled to make use of it until in the advanced stages, after all the usual means had been resorted to. He considers mainly those cases in which severe forms of septic infection with peritonitis, or pyemia with metastasis and emboli, were present, and only those in which there remained a possibility of accomplishing something by therapeutic interference. He at first considered alcohol, as did Breisky, in the light of an antipyretic, but found it inefficient; he then used it solely as a means of heightening the resisting powers of the patient, and in the majority of cases he was successful in this, with varying results. His material was derived altogether from private practice, consisting of eighteen cases. Of these, four had aborted (three beyond all doubt criminally); the other fourteen were delivered at the end of normal pregnancy. The majority of the labors were ended spontaneously in the presence of a midwife; three required the assistance of the obstetrician. In all the cases there were severe forms of puerperal disease. The alcoholic treatment was begun before the tenth day of illness in but five of the cases; in six, after the twentieth day. Local procedures were indicated in several cases in addition to the alcoholic treatment. In four cases, retained and decomposed portions of the ovum were removed, followed by disinfecting irrigation; in three it seemed advisable to make one more intra-uterine irrigation; in two cases permanent drainage was instituted. In the remaining cases the local processes were so far on the decline that cleansing irrigation of the vagina, with occasional cauterizing of ulcers in the introitus, were alone found necessary. In one case a parametritic exudate which had

softened was evacuated; in two the exudates evacuated spontaneously. The alcohol was administered in the form of cognac, rum, old Burgundy and old Bordeaux and southern wines, and heavy champagne, to disguise the taste; in addition, beef-tea, chicken broth, preparations of eggs, etc. Most of the patients took the alcohol in these forms willingly, others required continual variety in the form of alcohol; the cases in which there was an invincible repugnance to alcoholic beverages, or where there was continual vomiting, are of course not included. In almost all the cases treated with alcohol for a longer time, occasional diarrhea set in, whether in consequence of the regimen or as a symptom of the general condition is to be surmised. In one case the patient took in the first six weeks seventeen bottles of cognac, thirteen of Burgundy, thirty-seven half-bottles of champagne, four and one-half of other heavy wines, and six of porter. There were five deaths in the whole number.

Where the high temperature was persistent in recurrence, antipyretics—frequently antipyrine—were exhibited. Of the five who died, but three perished from the immediate effects of infection, one after four, one after six, and one after eight days' use of alcoholics in large doses. The two others died of pulmonary trouble; one was phthisical, with lungs already extensively altered when she became pregnant; the other died of edema of the lungs in consequence of ulcerations in the larynx.

While thus indorsing the views of Runge as to the action of alcohol in heightening the resisting powers of the system in puerperal fever, M. was not enabled to carry out his further recommendation with regard to bathing, and, reasoning from analogy, does not think the latter essential. He does not mean to have it understood that with the administration of alcoholics all local treatment, when indicated, is to be neglected; the alcohol is but the stimulus which is to be brought to bear to enable the system the better to withstand the pernicious effects of the local disturbances. L. R.

6. Schultze, B. S.: The Trial Tampon and its Value in the recognition of Chronic Endometritis (*Wiener Med. Blätter*, XX., XXI.).—In 1880, S. published a description of a method of diagnosis he had found useful for a number of years, which consisted of a tampon of absorbent cotton saturated with twenty to twenty-five per cent solution of tannin in glycerin; the tampon was firmly packed in the previously thoroughly cleansed vaginal vault, so that it covered and surrounded the os and the vaginal portion. If allowed to remain twenty-four to forty-eight hours applied to a healthy uterus, on removal a small, clear drop of cervical mucus will be found in the tampon at the part where it lay over the os; if the mucous membrane at any point above the os is in a state of catarrhal inflammation, pus which has escaped from the uterus will also be present; the tampon should fit so snugly to the vaginal wall that its remaining surface contains the uppermost epithelial layer of the vault.

S. has confirmed his warm opinion of the trial tampon by subsequent experience. After reviewing at length the unfavorable opinion expressed of the tampon by Schroeder in his text-book, the author goes on to explain the advantages of the tampon in diagnosing chronic endometritis, and the significance of the latter disease. Many cases of dysmenorrhea and sterility with no palpable causes have their origin in chronic dysmenorrhea; palliative measures are generally the sole treatment. By the time these patients consult the gynecologist, a host of complications accompany the original

trouble and overshadow it; the endometritis, 'apparently now a secondary matter, should be relieved first. Should, however, the patients be seen earlier in their troubles, and should nothing appear from a thorough examination to account for their condition, the tampon should be tried. In very many cases it will demonstrate the existence of chronic endometritis; and if the diagnosis be followed by the appropriate repeated irrigations with carbolic solution, the dysmenorrhea will disappear, and women formerly sterile will now conceive, provided that all the other conditions essential for fecundation are present. A large number of nervous and hysterical symptoms, especially nervous dyspepsia, various obscure pains, asthmatic attacks, and nervous cough, are occasionally dependent upon a purulent inflammation of the endometrium; the success of his treatment convinced him of this. It is not the loss of substance by the purulent discharge which debilitates the patient, for the amount of pus is frequently so little as to escape the notice of the patient; the affection produces by its location a variety of impressions of great menace to the general well-being. Stagnation of the secretion seems to be essential in the production of these effects; the fact that the purulent matter may be choked up within the uterus should greatly diminish the negative value of the absence of pus on the tampon on one trial; not only the discharge but the secretion of the pus is in some cases periodical. Pus stagnation seems to favor the very frequent accompaniment of parametritis of chronic character.

The earlier stages of chronic endometritis are latent in general practice; the anemia, pains in the stomach, and other dyspeptic symptoms, headache, migraine, and hysterical attacks, are the objects of occasionally successful, more often futile, treatment, until finally the genital trouble comes to the foreground. Years often elapse ere this occurs, and the patients are now greatly reduced; the treatment is now a far more complex and protracted one. If diagnosis is made in the earlier stage, we may often avert local treatment entirely by enjoining appropriate dietetic regimen and curative bathing resorts, and the disease runs its course without complications; or, should local treatment be imperative, it will lead all the more quickly and surely to a cure and guard against relapse.

L. R.

7. Weissenberg: On Gynecological Massage of the Pelvis (*Centrall. f. Gyn.*, XXII.).—The author presents some very practical points in the technique of this useful procedure, and, while not considering massage as a cure-all, is very warm in its praise as an adjuvant to other judicious treatment.

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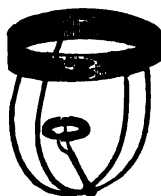
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THE AMERICAN JOURNAL OF OBSTETRICS

AND
DISEASES OF WOMEN AND CHILDREN.

VOL. XXII. DECEMBER, 1889. No. 12.

ORIGINAL COMMUNICATIONS.

IS CRANIOTOMY UPON THE LIVING CHILD JUSTIFIABLE ?

BY
WILLIAM H. WATHEN, M.D.,
Louisville, Ky.

IN this discussion I will limit my remarks to a few of the important facts bearing upon the question of craniotomy and some of its alternatives, and will give reasons why embryotomy on the living child is not justifiable; I will also suggest the alternative that may be substituted to meet the conditions of any particular case. Craniotomy is of great antiquity, antedating the time of Hippocrates, and it was probably practised by the Egyptians during the reign of the Pharaohs; it is an operation that has generally been championed by ignorance and often practised with seeming brutality. Fortunately, with the advance of the science of obstetrics and other collateral branches, a more general diffusion of knowledge, and a more correct appreciation of our moral and professional responsibilities, the medical profession now recognizes that the field of embryotomy is curtailed, and the tendency of science is to eliminate this operation on the living child from obstetric procedure. I believe that the alternatives, abdominal section, induction of premature labor, etc., will give results that will justify its total exclusion, but this presupposes that these operations should be

cases of election, and not done as a last resort. Unfortunately, the statistics of embryotomy have not been carefully or correctly kept, and we are unable to get at accurate conclusions as to its probable mortality compared with the mortality shown by the more carefully prepared statistics of abdominal section and the induction of premature labor. We are sometimes told that embryotomy should have a very low mortality, and we occasionally see statistics that appear to justify this assertion, but many of the cases operated on were women who had previously given birth to living children, or who could have been delivered by the induction of premature labor, or at term unaided or by the forceps or version. The German statistics are particularly faulty in this respect, and Leopold's reports of 20 consecutive cases delivered by craniotomy without a death is no fair criterion, for the conjugata vera diameter was 7.50 centimetres (nearly 3 inches), and in such cases craniotomy, if carefully done, should have a very low mortality; but it is contra-indicated, and some one of the alternatives would give nearly as good material results and would save most of the children. No better results are obtained in craniotomy than in England; they dread Cesarean section because of its local fatality, and prefer craniotomy in cases of pelvic deformity of low grade. Parry gives the British records in pelves of $2\frac{1}{2}$ inches or less at about 20 per cent. De Soyre gives 52 cases of embryotomy in pelves less than 2.15 inches, with 31 recoveries and 21 deaths, a mortality of 41.38 per cent; and Maygrier 67 cases in pelves from 2.53 to 1.40 inches, with 39 recoveries and 28 deaths, a mortality of 41.79 per cent; of these cases, 31 were in pelves measuring 2.34 inches at the highest, with 17 recoveries and 14 deaths, a mortality of 45.16 per cent. Rigaud and Stanesco give a mortality in 122 cases of embryotomy at 38.52 per cent. These are probably the most reliable statistics until very recently, and it will be observed that the conclusions are relatively uniform.

Dr. Wyder (German Gynecological Society, September 21st. 1887), in 167 craniotomies from the obstetric polyclinic at the Charité, gives a percentage of 14.50 mortality; of these cases only 126 had contracted pelves. In Carl Braun's Clinic, 1884 to 1885, craniotomy was done 49 times with 8 deaths, a mortality of 16.30 per cent.

Thorn (*Arch. für Gynäk.*, vol. xxiv., page 437) reports 80

cases from the Halle Clinic, with 10 deaths, a mortality of 12.50 per cent; and Merkel (*Arch. für Gynäk.*, vol. xxi., page 461) reports 100 cases, with 8 deaths, a mortality of 8 per cent. That we may appreciate how very simple these cases were, it is only necessary to know that of Thorn's list of 56 multiparæ, 39, and of Merkel's list of 68 multiparæ, 49 had given birth to living children, and most of them could probably have been delivered *per vias naturales* of living children.

No one will contend that craniotomy carefully performed should have any considerable mortality in such cases, but it will be claimed that some of the alternatives should be practised in the interest of the child, for surely it has some claims to our protection. The following from Barnes is quoted in defence of embryotomy: "Craniotomy done under fair conditions, such as are postulated for Cesarean section—that is, done at a chosen time, with due skill—does not involve any material mortality." But the force of this argument is practically destroyed by his further statement (*British Gynecological Journal*, part viii., 1886, page 315) that if we save the life of the mother by sacrificing the child, she may afterward be delivered of living children by the induction of premature labor. As it is conceded that few children are born alive in pelves of less diameter than three inches conjugata vera, we may logically conclude that most of Barnes' cases had a diameter of three inches or more.

Wyder (*Arch. f. Gynäk.*, vol. xxxii., page 1) gives the mortality of 215 cases of craniotomy at Berlin, Halle, and Leipzig at 5.60 per cent, but he gives no detailed account of the exact indications, and most of the cases were presumably the lesser forms of pelvic contraction. It will not be gainsaid that craniotomy is often done on living children in cases where the women could have been delivered by the unaided efforts of nature, or by means that would have saved the lives of both mother and child; and any physician of large observation and experience knows of instances where a physician, or several physicians, had decided that craniotomy was necessary, but while preparing to operate, or because of delay occasioned by the refusal of the woman, her family, or her spiritual adviser to have the operation done, a living child was born. It is a conspicuous fact that the operation is relatively more frequently done by men who are comparatively ignorant of the science of obstetrics; as men become learned in obstetrics, the

operation becomes less frequent. Collins performed craniotomy once in 141 cases of labor, Clark once in 248, and Ramsbotham once in 805; but Siebold performed it only once in 2,095 labors, Baudelocque once in 2,898 cases, and More Madden has never recognized its necessity or countenanced its performance. (*British Medical Journal*, October 2d, 1887, page 627).

As remarked by Dr. Busey, "The extraordinary frequency in the practice of some competent obstetricians is explicable only upon the theory of an automatic belief in its justifiability, which involves the more 'sweeping doctrine of necessary blamelessness for erroneous conclusions' (Gladstone), or the favorite and broader doctrine of Ingersoll, 'The immunity of all error in belief from moral responsibility.'"

The *future welfare* of society and of the state is practically ignored by the embryotomist; he sees nothing beyond the *present*, and is controlled by the belief that the mother is of much more immediate use to the family, society, and state than the unborn child, and, therefore, it may be sacrificed. This belief probably has its origin in that ancient philosophy so forcibly enunciated by Cicero, and taught by moralists of all ages, that the life of the weaker and less useful, or that life which is of less value to state or society, may be sacrificed to protect the life of that person who is of greater value to state or society.

While pagan and stoic philosophers and moralists have been nearly unanimous in defence of this principle, such is not true of Christian philosophers and theologians. With few exceptions, theologians of the Catholic Church have always contended that embryotomy on the living child is forbidden by the commandments. This question was finally decided by Rome in 1884. The decision of the Holy Office, in answer to the *dubium* of the Cardinal Archbishop of Lyons, is against the lawfulness of craniotomy on the living child, or at least *tuto doceri non posse*.

Practically, the philosophy which justifies the killing of an innocent person to save the life of another, if ever true, is not usually applicable to embryotomy, for women who have previously given birth to living children, or who have pelves large enough to give birth to living children in subsequent pregnancies, can generally be delivered without sacrificing the child. The exceptions are, in cases of monsters, hydrocephalus, etc.

But in cases where it is claimed the operation is indicated, the women have usually had no living children, nor are they capable of having any; so their existence is necessary only so far as they are able to contribute to the immediate interest and welfare of husband, society, and state, and at death their usefulness is ended. In such instances, the killing of the child would be largely a selfish matter, for it may, without materially endangering the life of the mother, be delivered alive by abdominal section; it may then become a useful member of society and state, and produce children that may continue to multiply and do likewise.

The destruction of life by craniotomy is so great, and the injury to society and state so manifest, that it is our professional, moral, and political duty to substitute some of the alternatives in the interest of the child, if we can do so without doing injustice to the mother.

Nearly seven thousand children are sacrificed annually in the United States by embryotomy. This estimate is based upon the most favorable mortality reports of less than ten per cent, with a population of sixty millions, and one craniotomy (Tyler Smith) in every three hundred and forty labors.

At the close of a few generations the loss would be relatively very great.

Let us now briefly consider the results to mother and child where the alternatives have been adopted. We will not waste time considering the old statistics of Cesarean section, where the operation was performed crudely with none of the modern and more successful modifications, and generally only as a *dernier ressort*, for in such cases it is not possible to get good results. Nor will we consider the results of laparo-elytrotomy, for this operation is too complicated for general adoption, and in the practice of expert operators has not given as good results as the improved Cesarean section or Porro's operation. Nor is it hardly fair to include the statistics of the improved Cesarean section or Porro's operation in the United States, for nearly all these operations have been done after exhausting all other means, with the women nearly dead, and seldom as operations of election.

The following are the most complete statistics available on the improved Cesarean section, Porro's operation, and the in-

duction of premature labor, for which I am largely indebted to the courtesy of Dr. R. P. Harris, of Philadelphia:

PORRO-CESAREAN OPERATIONS.

No.	Countries.	Opera- tors.	Local- ties.	Cases.	Women saved.	Women lost.
1	Italy	52	35	92	48	44
2	Austria.....	15	7	61	43	18
3	Germany	27	18	43	22	21
4	France	9	7	17	6	11
5	England	10	2	12	5	7
6	Russia.....	6	4	10	7	3
7	United States.....	9	7	9	2	7
8	Belgium.....	4	3	5	3	2
9	Scotland.....	4	2	5	1	4
10	Switzerland.....	2	2	4	3	1
11	Holland	2	2	2	1	1
12	Australia	2	2	2	2	0
18	Spain	1	1	1	0	1
14	Mexico	1	1	1	0	1
15	Japan	1	1	1	1	0
				265	144	121

26 operations, with 4 deaths, in 1888.

SÄNGER-CESAREAN OPERATIONS.

No.	Countries.	Opera- tors.	Local- ties.	Cases.	Women saved.	Women lost.
1	Germany	44	22	92	79	13
2	Austria.....	13	7	32	26	6
3	United States.....	24	13	32	15	17
4	Russia.....	7	5	10	7	3
5	Holland	5	5	9	9	0
6	Italy	3	3	7	5	2
7	France.....	2	1	4	2	2
8	England	3	2	3	1	2
9	India	1	1	2	1	1
10	Switzerland.....	2	1	2	1	1
11	Denmark.....	1	1	1	1	0
				194	147	47

68 operations in 1888. 56 in Europe, with 8 deaths.
12 in the United States, with 7 "

It will thus be seen that Porro's operation has saved in all countries 54.33 per cent of the mothers and 82.77 per cent of

all the children, or 137.10 lives out of 200 involved, while the improved Cesarean section has saved 75.77 per cent of the mothers and 93.81 per cent of the children, or out of a total of 200 lives has saved 169.58 lives. But if we very properly exclude the improved Cesarean operations in the United States, 81.48 per cent of all the mothers were saved, thus saving out of 200 lives 175.29 lives. The above is conclusive that Porro's operation cannot be substituted, only in exceptional cases, for Cesarean section, unless future results materially change the statistics. So far as concerns the mothers, however, the results of 1888 are apparently in favor of Porro's operation, unless we again exclude the United States, the percentage being 84.61 against 78. By excluding the United States the improved Cesarean section gives a success of 85.71 per cent.

It will be seen from the following statistics collected by Spiegelberg in 1870, and by Litzmann, from the best authorities, that premature labor induced, and premature labor in contracted pelves, has not given as good results as the improved Cesarean section or Porro's operation. In Spiegelberg's 219 cases, 84.90 per cent of the mothers and 32.10 per cent of the children were saved, or 117 lives were saved out of 200; and in the 34 cases of Litzmann, 44.20 per cent of the mothers and 47.35 per cent of the children were saved, or 101.55 lives were saved out of 200. In Litzmann's statistics of premature labor in small pelves, a percentage of 68.80 of the mothers were saved and 68.75 of the children, or 137.55 lives were saved out of 200.

Maygrier gives the results of induced labor in pelves of 2.73 inches and below as follows: Mothers saved, 66.67 per cent; children saved, 35.30 per cent—or 101.97 lives saved out of 200. These are the best results that have been obtained, and the percentage of lives saved might be materially lowered by deducting those children that died within a few days or weeks after birth.

In the statistics of Rigaud and Stanesco in induced labor in pelves from 3.51 inches to 1.95 inches, 69.91 per cent of the mothers were saved and 30.09 per cent of the children, or 100 lives were saved out of 200. In pelves between 2.34 and 1.95 inches, more than half the mothers and all the children died; so it will be seen that labor in pelves below 2.34 inches cannot be induced in the interest of the child. The most encouraging statistics of induced labor are given by Wyder (German Gyne-

cological Society, 1887). He reports 98 cases in which 91.80 per cent of the mothers were saved and 52 per cent of the children, or 143.80 lives were saved out of 200; but the conditions that indicated the induction of premature labor are not clearly given, and many of the pelves were probably relatively large.

The report by Wyder (*Archiv f. Gynäk.*, vol. xxx., page 1) of 306 cases of premature labor, with a mortality of 3.90 per cent, is not worthy of consideration in this connection, and should not influence us in adopting the alternative of premature labor.

While the induction of premature labor shows results much worse than the improved Cesarean section, there are instances where it is a better alternative to craniotomy, and, therefore, the following facts may be useful:

It is never wise to induce premature labor in pelves with a conjugata vera less than 2.50 inches; the fetal head at seven months, being only 2.70 inches in its biparietal diameter, may be compressed 0.39 of an inch by the uterine contractions, thus enabling it to pass through the pelvis. If the contraction is not so great, pregnancy may continue longer, since the biparietal diameter measures at seven and a half months 2.90 inches, at eight months 3.10 inches, at eight and a half months 3.30 inches, at nine months 3.50 inches, and at term 3.70 inches.

That the Porro operation is preferable to the Cesarean section in some cases no one will deny, and Säger gives the following indications for its performance:

1. "When the discharge of lochial secretions is rendered difficult or impossible *per vias naturales*—i.e., by stenoses and atresiae of the cervix and vagina, or by tortuosity and compression of the soft obstetric canal, due to a tumor not belonging to the uterus."

2. "By pregnancy in the closed-up half of a *uterus bicornis*, in which delivery is preferably effected by establishing an artificial opening toward the open half (strictly speaking, this is not a true Porro operation, since the remaining half of the uterus may be again impregnated)."

3. "When infection of the corpus uteri is evident."

4. "After repeated classical *sectio Cæsaria*."

5. "By serious osteomalacia."

When delivery *per vias naturales* is prevented by uterine or

McGILLICUDDY: *The Perineum and Forceps.* 1241

abdominal tumors, the alternative to craniotomy is to remove the tumors, if it is possible to do so, otherwise the Porro operation is the proper alternative. Porro's operation is also indicated in a ruptured uterus where the rent extends through all the coats, whether the child is in the abdominal cavity, the uterus, or has been delivered. If the blood, the bloody serum, and liquor amnii be thoroughly removed from the peritoneal cavity before decomposition or inflammation, the operation offers but few additional dangers and removes many. But the operation should be done immediately, for all the pathological changes are against the late operation. The woman may have recovered from the shock, but adventitious sacs, plastic adhesions, etc., will have formed, will prove troublesome, and will prevent success.

The above justifies the conclusion that the risk to the mother, in timely operations and in cases of election, in abdominal section for the removal of a living child, is not greater than in embryotomy, and when the medical profession correctly appreciates this genuine truth mutilating operations on the child will be relegated to their proper sphere, viz., cases where the pelvis is relatively large and the fetus is dead.

SOME POINTS ON THE PERINEUM AND FORCEPS,

WITH A DESCRIPTION OF A NEW METHOD OF ASSISTING THE PERINEUM,
AND A NEW COMBINED AXIS TRACTION FORCEPS TO BE USED AS AN AL-
TERNATIVE FOR CRANIOTOMY.

BY

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to the New York Mothers' Home, etc.

(With twelve woodcuts.)

THE use of the forceps is the most important of all obstetric operations, and on its correct manipulation depends, to a great extent, the welfare of both mother and child. Perineal lacerations that could be easily obviated are among the most frequent results of the injudicious use of the common forceps,

when by a little study and care with each individual case they need occur but rarely. With our improved knowledge of the physiology of parturition and anatomy of the perineum, the writer believes that we can in many cases, by proper interference, protect the perineum from laceration, while misdirected efforts, based on an erroneous theory or on none at all, often cause the injury. There are cases, however, in which the vulva and perineum will not stretch but will rupture in spite of every effort. All lacerations should be prevented when it is possible, as the slightest are in no way beneficial and

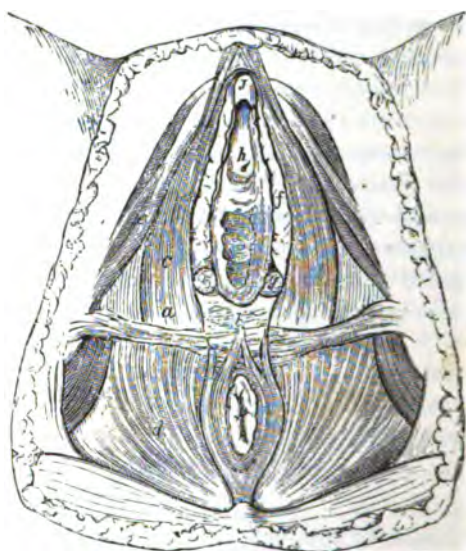


FIG. 1.—Dissection of perineal region (Savage). *a* is just above transversus perinei; *b*, base of perineal body; *c*, bulbo-cavernosus or constrictor vaginae; *d*, levator ani.

may become an entrance for sepsis. "Supporting the perineum," so-called, came into vogue about the middle of the last century; accepted by some and by others rejected, its status has been doubtful up to date. The vast majority of obstetricians are convinced, however, that "something must be done" to prevent the perineal tear; but they are not entirely satisfied with present methods, and when they do adopt them they are not successful in a large proportion of cases.

A variety of methods have been proposed, but the usual way of "supporting the perineum" is like placing the hand flat

against a piece of rubber to keep it from stretching. Marcy,¹ in writing of the perineum, says: "In the nulliparous woman this is clearly defined as a firm portion of the pelvic floor, and is composed of skin, fat, elastic and connective tissue, transverse muscles sustaining fascia, and the anterior portion of the sphincter ani." . . . "The vulvar organs are all intimately blended with, and go to form a part of, the perineum proper."

The best time to examine the perineum and its muscles is during parturition, as then, all the tissues being extremely elastic, the finger can easily trace each separate muscle and study its relations.

In many cases any interference with the perineum is not called for, but it is always proper to watch it carefully and see that it dilates equally and gradually, holding back the head when the tension is too great. Sometimes the uterine forces take a vicious direction, driving the head backward and even causing delivery through the rectum. In one case I arrived just in time to prevent this accident; the rectum was bulging outward and delivery threatening through it, caused by the parts being exceedingly distensible and by a misdirection of the forces. If the posterior commissure and perineum become dangerously tense, or when the forceps has brought the head against the perineum, distending it and the vulva sufficiently to allow about two inches of the scalp to show between the labia, and delivery of the head is imminent, the following method, which is the result of the study of a large number of cases, may be employed:

Standing at the right side of the patient, with forceps removed, after wiping the skin with a dry towel, the left hand, with the thumb on the right labia and the tips of the fingers on the left, presses down and draws the vulva and constrictor vaginæ from their attachment at the symphysis, thus enlarging the ostium vaginæ and relaxing the fourchette. The right hand also relaxes the posterior commissure by pressing the skin, connective and muscular tissue toward it, as illustrated in Fig. 2, in the direction of the arrows. The rate of delivery of the head may be regulated by pressure of the thumb of the right hand against the scalp, if it is coming too fast; or the first two fingers, by pressure at the brow, malar bones, or chin through the anterior wall of the rectum, can assist the enu-

¹ AMERICAN JOURNAL OF OBSTETRICS, January, 1889.

cleation of the head in the intervals of the pains. With the right hand we relax from the sides the skin, transversus perinei

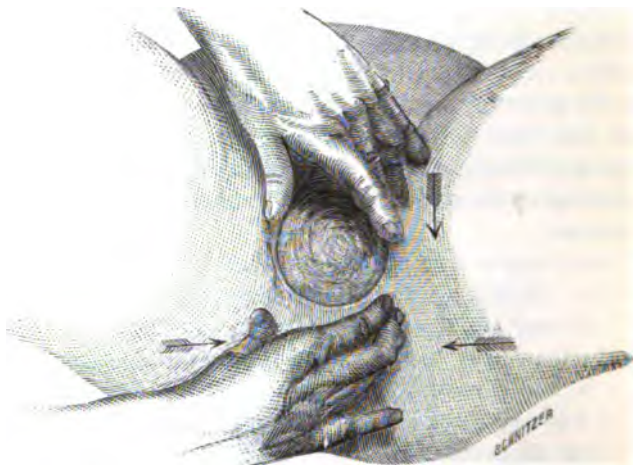


FIG. 2.—Showing author's method of assisting the perineum.

muscles, and that part of the perineal fascia named by Savage the ischio-perineal ligaments and mucous membrane. That

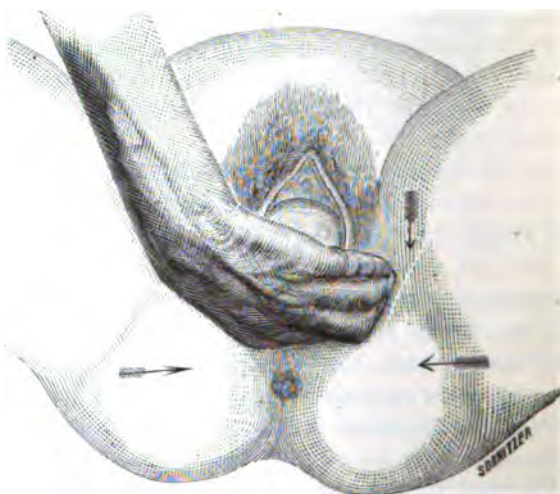


FIG. 3.—The left hand as the bitemporal and bimastoid diameters escape the vulva.

this pinching and pressing of the transversus perinei toward the central tendon of the perineum can be done is shown by

pinching up the tissues of the thigh. The principal strain comes on the central portion of the perineum at the fourchette.

The above method is to be used during the pains, before and at the moment of crowning and expulsion of the head, when the mother should be cautioned in some cases not to bear down too forcibly. The attendant must also be careful that the patient does not jerk herself away from the pressure suddenly, causing the head to come quickly against the parts and thus producing the very accident it is sought to avoid. This method increases the circumference of the vaginal outlet when it cor-

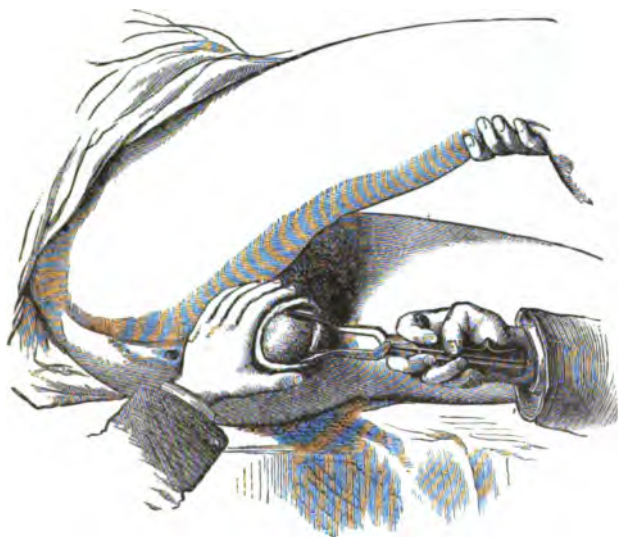


FIG. 4.—Last stage of extraction and preservation of the perineum (Playfair).

rugates and relaxes the posterior commissure; it also has a strengthening effect on the weakest part. At the same time it helps the head to complete the pelvic curve and in emerging to hug the pubes, thus assisting and imitating nature. Goodell, in his method, draws only from below and then through the rectum. He says, in his interesting article in the *American Journal of Medical Sciences*, January, 1871: "As the dilatation of the ostium vaginæ is made at the expense of the labia, which are attached to the anterior aspect of the pubic rami and symphysis below the mons veneris, much advantage will be gained both by compelling the complete extension of

the head and by carrying forward the perineum in order to approximate the fourchette to the level of the symphysis, whence its fibres spring."

Figures 4, 5, and 6 show how *not* to assist the perineum, and are methods which the writer condemns.

Among the principal indications for the use of the forceps are failure of the ordinary forces and conditions, where the mother or child is in danger and a rapid delivery is requisite.

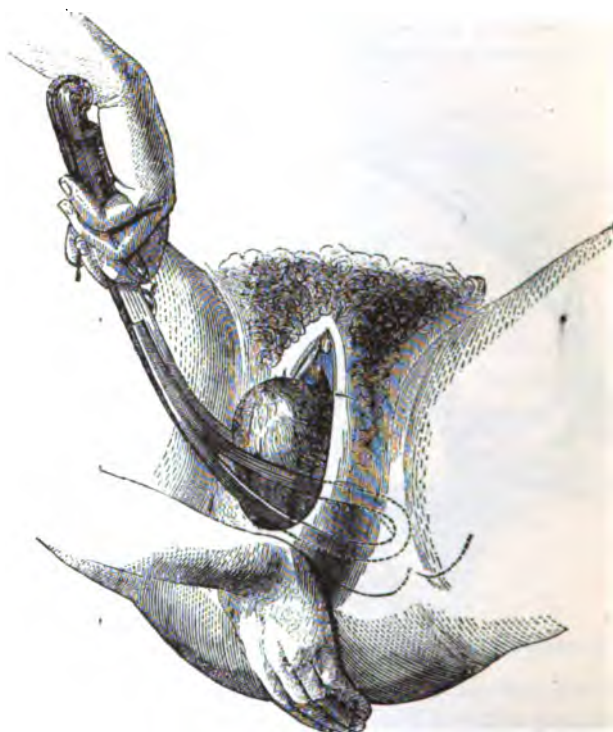


FIG. 5.—The forceps with the head at the vulva (German school) (Charpentier).

It is sometimes applied before it is really necessary, where the labor is lingering although otherwise natural. An obstetrician should never be in a hurry: art cannot perfectly imitate Nature, although it may assist her. To interfere by application of the forceps too early is dangerous, as, Nature not being prepared to act promptly and the head not having moulded, the operator finds to his surprise that very powerful and repeated tractions with compression are required, and then often, after much diffi-

culty, finds a dead infant as the result of the delivery. Nature may be apparently slow, but she is generally sure, and while neither mother nor child is in danger there is no indication for

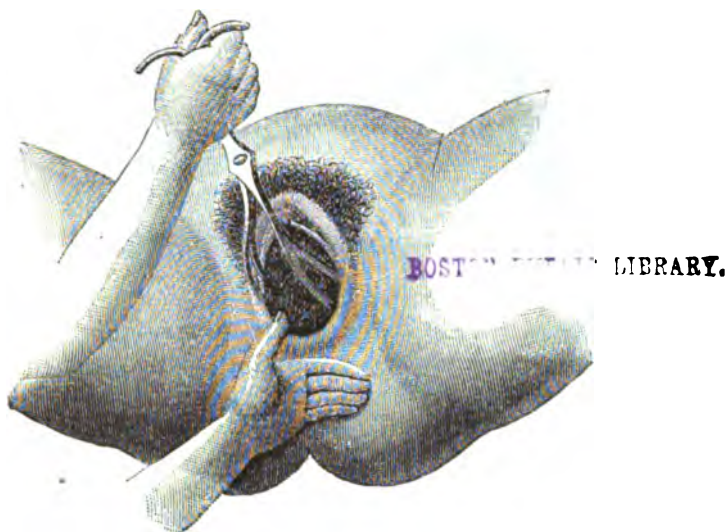


FIG. 6.—Delivery of the head with the classic forceps (French method) (Charpentier).

the use of forceps. A great many modifications of the forceps have been proposed since its invention by Chamberlin. I find none, however, described, in the works of the authors that I have

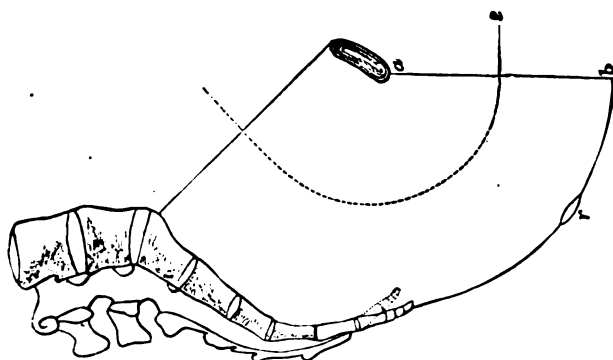


FIG. 7.—Diagram showing the axis of the parturient canal (Leishmann).

consulted, similar to the following. All tractions with any forceps ought to be made in the direction of the pelvic axis. The common forceps in use does not meet all the requirements,

especially when the head is at the superior strait. It cannot be made to follow the curvilinear direction necessary for axis traction while compressing the head in difficult and dangerous cases, even by the method of Dr. Albert H. Smith, because in making



FIG. 8.

the handles a lever of the first kind you lose a great deal of the power of traction, which is always weak in the common forceps.

This instrument is the ordinary forceps of Simpson or El-



FIG. 9.

liot, provided with adjunct handles, making each blade and handle as firm as if it were one solid piece. With it we can



FIG. 10.

make traction in the ideal pelvic axis during the entire passage of the head, and the direction of the traction is in a line passing through a point near the end of the handles to the centre of the fetal head (see Fig. 11). It prevents the impinging of the

fetal head against the inner side of the pubes, which is the cause of most of the trouble and difficulty in forceps cases. We ought to know before the application of the forceps the exact location and presentation of the head, by digital examination combined with abdominal palpation, as the French method of aiming to grasp the head in the biparietal diameter is very much to be preferred to the English or German, where the blades are inserted parallel to the sides of the pelvis. With the ordinary forceps, when leverage and axis traction are imperfect, the sharp ends of the blades may, when describing the

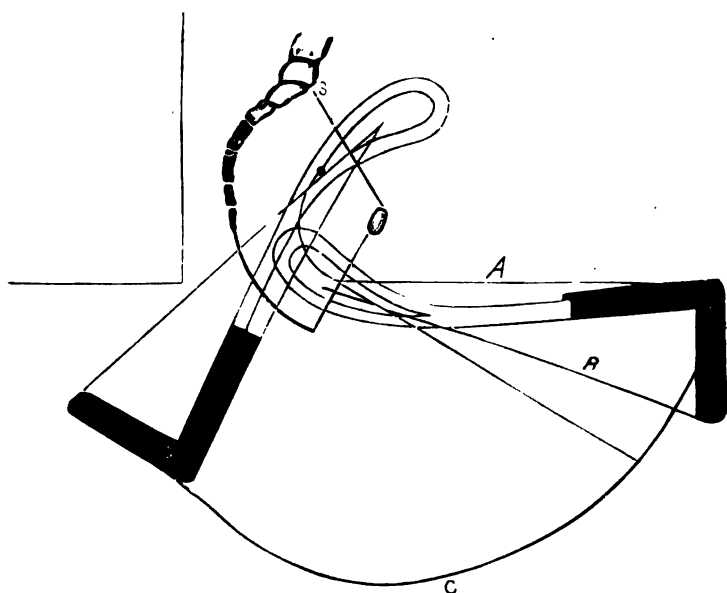


FIG. 11.—Modified from Charpentier.

pelvic curve, lacerate the vagina, with rupture of the perineal muscles from within; or cause extension of the forehead and face before the occiput has escaped under the pubes; or the shanks of the blades may grind against the pubic arch, doing damage to the urethra. The above forceps, when well applied, gives to our sense of touch or muscular sense, by its handles, impressions which act as a guide, and the straight portions of the handles are a positive index of the progress and position of the blades; therefore the traction is neither blind nor uncertain, as in some forms of the instrument. Axis traction is a necessity,

and it need not cease even when the head has reached the pelvic floor. It cannot be performed properly with the common forceps, where considerable force must be employed. This works all right in cases of easy delivery, but in difficult cases requiring much force it is neither safe nor efficient, as a great deal of the force is expended against the pubes, sometimes even causing fracture at the symphysis. With this form there is no binding screw necessary, and the blades are not immovably fixed after adjustment, as in the forceps of Tarnier; this is important, as sloughing of the tender skin has followed the constant pressure of the blades, which should be released every few moments so as not to interfere with the circulation of the parts included. The Tarnier instrument is

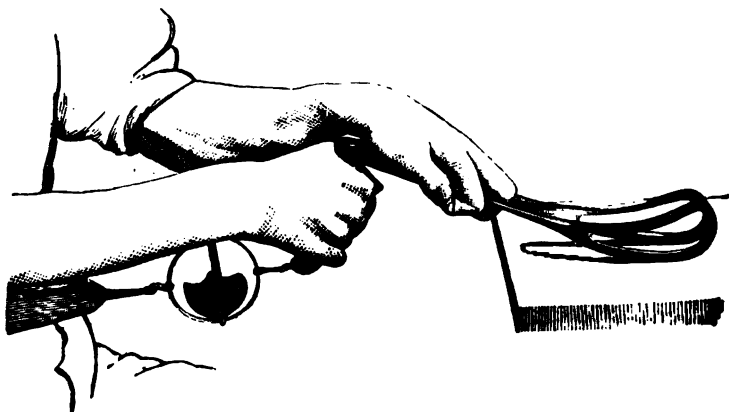


FIG. 12.—Duke's belt with dynamometer.

complicated, no more efficient and more expensive than this form. The advantages claimed are that it makes direct, uncomplicated axis traction; that it is simple and easy of application; that in its dual character it has all the advantages of axis traction and the ordinary forceps, and saves the expense of buying two instruments where one will do; that it is easier to make rotation in posterior positions with the adjunct handles. The blades should first be applied, and the supplemental handles attached when required, as this takes but a few seconds. If well made it will stand any degree of manual force. In some difficult cases, additional traction can be used as an alternative or substitute for delivery by version or craniotomy. The belt and dynamometer designed by Dr. Alexander Duke, of Dublin,

can be added to the instrument to supply a greater amount of tractile force, which is often needed in forceps cases. He used this device whenever the forceps failed or when much fatigued, and is convinced that cases occur in which the child's life has an additional chance in using this plan of delivery, without additional risk to the mother. He says "there is more chance for the child and less risk to the mother's soft parts by pulling the head more forcibly and rapidly through the pelvis, than if it is allowed to remain to mould, as it is called, thus checking the circulation in the parts lining the pelvic walls; and if a greater force is applied to deliver, the pressure is removed for good and all, and the circulation becomes in those parts re-established." When we consider the "wrong of craniotomy on the living fetus," we know that a conservative measure of this kind should be tried as an alternative, because there are many cases, where craniotomy has been advised or performed, where the mother has previously given birth to a living child; and in others, during the preparations for the operation, and while waiting for the consent of those concerned, Nature has delivered the mother of a living fetus. I have personal knowledge of two similar cases. The operation of craniotomy upon the living fetus will shortly, in the light and advance of modern obstetrics, be relegated to obsolete operations.

125 EAST 83D STREET.

FIBROMA DIFFUSUM OF THE LABIA MINORA.

BY

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Lecturer in Gynecology, New York Polyclinic.

(With colored plate.)

THE case from which the accompanying plate was taken came under my observation while house surgeon to one of the venereal services at Charity Hospital during the winter of 1882-'83, and from its rarity has seemed worthy of notice. It was first photographed for me by Dr. Hagen, of this city, then

druggist to the hospital. A few weeks subsequently it was brought to the notice of Dr. R. W. Taylor, one of the visiting surgeons, at whose request a more perfect view was taken. At that time the condition was considered to be condyloma with hypertrophy, but, from the study of a large number of cases of hypertrophied and elongated nymphæ which I have subsequently observed, I am forced to believe it fibroma diffusum—a condition ably described by Mann in the "American System of Gynecology."

The patient was of medium size, light complexion, 25 years old, Irish descent, of doubtful character; she stated that she had been married six years, and had given birth to a child in early married life. Three years prior to her admission to the hospital she contracted syphilis, for which she received treatment. Six months later she was ill-treated by her husband, receiving a severe kick on the soft parts of the vulva, which became much swollen, the labia minora remaining large and hard from that time. No pain or discomfort followed the first effects of the injury. Later she contracted a gonorrhea, and a chancroid appeared on the inner side of the left labium minus; for these conditions she was admitted to the hospital for treatment.

Examination revealed old syphilitic lesions; alopecia; enlarged epitrochlear glands; a lenticular syphilide over arms and legs; tibial tenderness; greenish, purulent discharge from vagina; and on left labium minus a sore with the characteristics of chancroid. The labia majora were normal. My notes on the condition of the labia minora are as follows: The left labium minus (patient in dorsal position) is greatly enlarged and very hard, bends on itself at its lower third, and forms a fleshy prominence extending to within a short distance of the anus. When held up, the inner portion, where the labium has its attachments, is found comparatively thin. From a point above to the lower end of the mass is about two inches; from the thin attachment to the greatest curvature, about one and three-quarter inches; at its thickest portion, about half an inch. On the inner side of this mass is situated the chancroid with its clear-cut edges. The appearance is that of a tumor attached to the outer portion of the labium and covering over the ostium vaginae. The mucous membrane covering the enlargement is slightly thickened and traversed by numerous indentations two or three lines deep, adherent to the tissues beneath. In appearance it is a pinkish white. On pressure it feels like fibrous tissue. As the mass is lifted up (Fig. 2), it gives distinctly the impression of a tumor with a broad, thin pedicle. The right labium, about half the size of the left, presents similar characteristics. The junction of the labia is thin, and drawn long by the weight. There is absolutely no pain.

When I suggested to her the advisability of surgical treatment,

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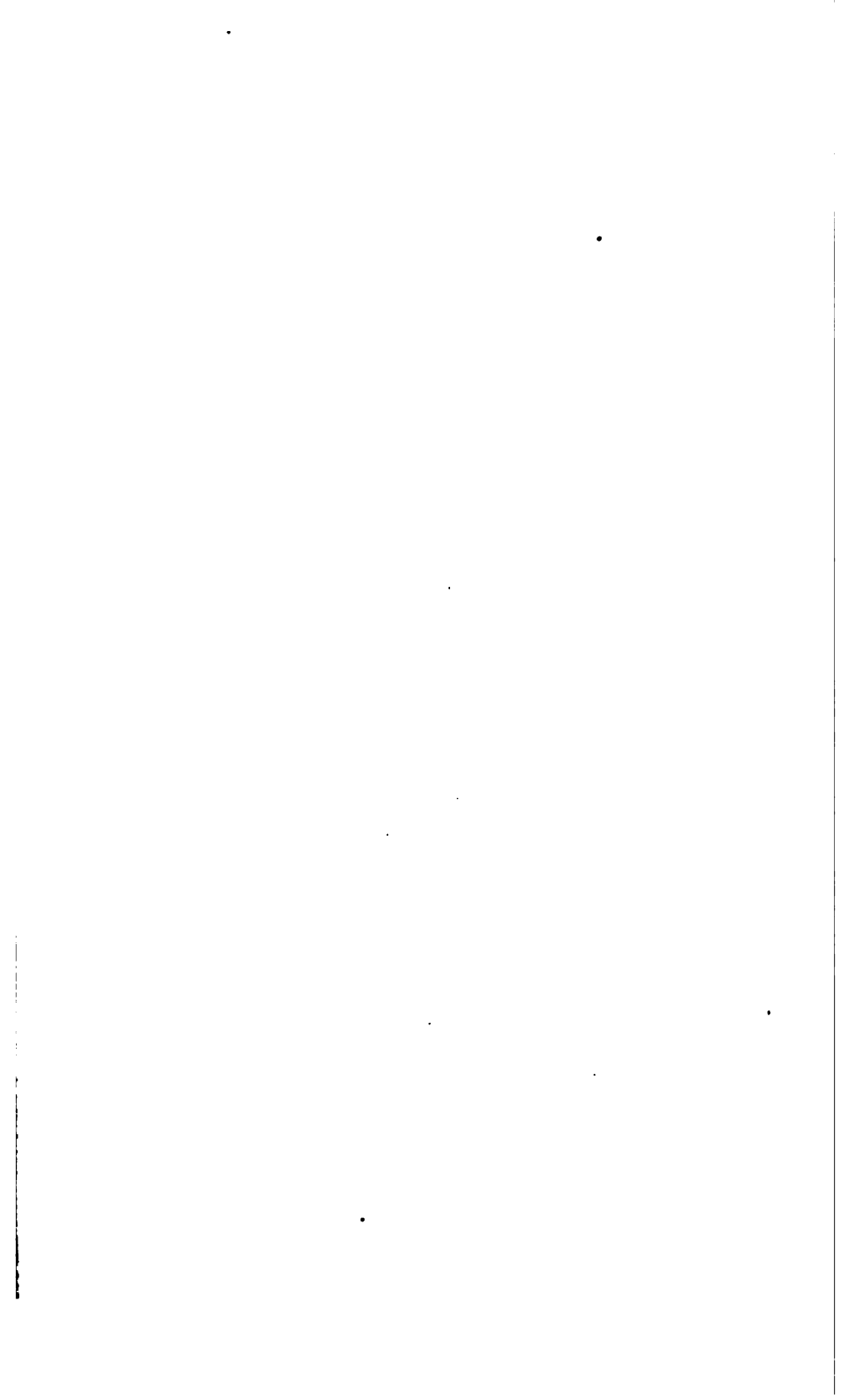
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she remarked that, as they caused her no discomfort, she was not anxious to have anything done; but she finally agreed to get the consent of her husband and return for operation. Unfortunately for me, she never returned; therefore I cannot give the microscopical characteristics of the growth. The labia never were edematous, neither were the secretions altered in any way after the cure of the gonorrhea and chancroid.

The question naturally arises, Is this a case of diffuse fibroma, or is it simple hypertrophy? In the latter, we have elongation, varying in degree; thickening, equal throughout; corrugations, but not fissures in the membrane; and a general softness. This condition is produced by some external irritation, as masturbation.

In diffuse fibroma, the etiology is very obscure. Syphilis has been more generally assigned as a cause than anything else; chancroids or buboes may have a causative influence by obstructing the flow of lymph through the vessels or glands of the parts, and so producing a lymphatic edema. Matthews Duncan's cases reported as lupus, gummata, cancer, or elephantiasis were found by Thin not to be such microscopically, while in those cases that have borne evidences of syphilis the disease has not yielded under antisymphilitic treatment.

Clinically, as in this instance, these cases occur during the period of sexual activity, usually between the ages of twenty and forty years. The parts affected are the labia majora, clitoris, or labia minora. Either or both sides may be affected, equally or unequally. The shapes vary according to the locality and the part affected, but are usually polypoid with distinct pedicle. Masses covered with skin are usually rough, while those covered with mucous membrane are smooth, lobulated, or fissured. If the surfaces impinge and rub much, ulceration, simple in character, occurs. In growths covered with mucous membrane, the color may be pink, white, mottled, or dark; the tint varying according to locality and surrounding influences. The disease in itself causes no pain or discomfort, other than the inconvenience the tumor or tumors may produce from their size and locality. In the case here noted, the inconvenience was mainly an interference with coitus, the curtain-like masses having first to be lifted before intromission could be accomplished.

Histologically these growths consist of a hyperplasia of the connective tissue about the vessels and under the epithelium of

the part, together with a general small cell infiltration. There is also dilatation of the lymph spaces without proliferation of endothelium. The covering, be it skin or mucous membrane, is usually not thickened and is movable, though exceptions exist.

As these masses grow slowly, last indefinitely, and are not affected by internal medication, their removal by surgical means is our only resource. The indication for operation is usually the annoyance caused by the mere presence of the mass or the resulting deformity. The method of procedure must necessarily depend upon the individual case and the part affected, and may be by the knife, scissors, cautery, or ligature. The prognosis as to return after operation is good.

In all points except a confirmatory microscopic examination, this case corresponds with the recorded instances of fibroma diffusum.

173 EAST 83D STREET.

FROM APOSTOLI'S CLINIC.

BY

ALICE T. HALL, M.D.

PATIENTS who frequent Apostoli's clinic are very like those who seek our public dispensaries for gynecological treatment. They belong to the laboring classes, are hard-working, respectable women, and represent nearly every trade. The concierge, laundress, market-woman, shop-girl, seamstress, street vender who has heard of Apostoli through friends, or who has not been benefited at other clinics, comes to see what electricity will do for her. Some are sent by other physicians in whose hands the ordinary treatment has failed. These patients present the usual pathological conditions—ovarian neuralgia, dysmenorrhea, endometritis, cellulitis, displacements, fibroids, etc.—and all receive electricity in some form or other. Ovarian tumors, and cancers, are the only exceptions. Thus far, as ordinarily given, electricity has seemed to stimulate the growth of these tumors, and such cases are therefore referred to a hospital, or special surgical interference is recommended. The

effect on ovarian tumors of electricity in doses of five hundred to six hundred milliamperes, as used by Dr. Inglis Parsons, of London, for cancer, with apparent success, has yet to be tested; but it is not improbable that a method may be devised in the near future by which electricity can be applied even to this class of cases with safety and success.

The Apostoli method has not been a great success in the hands of most of the physicians of the United States and Great Britain, if one can judge from reports of society proceedings, and from replies received by Apostoli in answer to a letter sent to leading American and English physicians, asking if they had used the method, what results they had had, and what opinion they had formed as to its value. Engelmann, Martin, Laphorn Smith, no less than Keith and Sir Spencer Wells, are among noted exceptions, and their results must be attributed to the fact that they understand how to use electricity and that they observe all the conditions necessary for success.

That Apostoli does get marked and lasting effects will not be disputed by any one who has followed the cases at his clinic for any length of time. His success would seem to be due to attention to all details, rigid antisepsis, and careful adaptation of the kind and amount of electricity to the strength and condition of the patient. As a rule, after a few visits to the clinic enthusiasm is almost unbounded. Electricity can do everything, and one longs for the chance to try his hand and show his skill. But this heat is tempered later. The careful observer will not fail to remark the regard for small things, nor to reach the conclusion that it is not electricity alone, but electricity applied by a watchful, patient intelligence that knows when to put forth and when to withhold. Electricity is also seen to have its limitations, since many of the cures are symptomatic only. Fibroids are, indeed, reduced in size and sometimes disappear altogether; pelvic exudates are quickly absorbed; but when the uterus or its appendages are prolapsed, when version or flexion exists, the position is very little affected. The way, however, is prepared for other treatment, and to complete the cure. Brandt's massage and lifting the uterus may be used to advantage, or the better known method of replacing the organ and keeping it in position by tampons or pessaries.

The procedure at the clinic is as follows: The patient has her history taken by an assistant, and is then examined, the

vaginal examination being preceded by an antiseptic injection of creolin or sublimate. A diagnosis is made, after which several of the physicians present are asked to examine, and to confirm or dispute the diagnosis. Frequently, however, they are called upon to express an opinion independently of Apostoli, who withholds his own until each has given his diagnosis, orally or in writing. After a discussion of the case, the assistant records the condition from dictation. The patient has another antiseptic injection, receives any necessary advice or prescription for her general health, diet, etc., and is told to return in two or three days. At the next visit the examination is repeated, the previous opinion confirmed or, it may be, modified. Sometimes, of course, the diagnosis is reserved, as when pregnancy is suspected or when the nature of the existing lesion is obscure. The patient is then kept under observation until some conclusion can be reached and a plan of treatment formed.

Patients with simple ovarian pain only are treated at their first visit with the faradic current. This may be given in three ways. A bipolar uterine sound is introduced into the uterine cavity; or, if this cannot be done, a large bipolar vaginal sound may be used, the end of which is pressed against the ovary; or one pole may be placed over the ovary externally and the other applied through the vagina. The bipolar intra-uterine application is the best. The sound being in place, a current of tension (fine wire) is given for five to fifteen minutes, and it is rare that immediate and lasting relief does not follow. One treatment is generally sufficient, but more may be needed, and, if so, should be given every day until the cure is complete. Cases of marked hysteria but rarely yield to this treatment. They bear the current of tension or the current of quantity equally well, with almost no expression of pain; that is, they can take immense quantities of electricity. The pain felt by the non-hysterical when the current is first applied passes in a few seconds. If the current is very gently given, the tension gradually increased, the patient will hardly have time to complain before the discomfort is gone. In faradization, if the patient does not feel the current, two explanations may be given: either it does not pass or the nerve is *immediately* anesthetized. To prove the former, replace the fine by the coarse wire, and if a current is passing the patient will certainly

feel it. If she does not, the battery or conductors need attention.

If in doubt as to whether the pain is hysterical or not, observe its character—if it comes and goes brusquely on sudden pressure, if it is limited to the abdomen. Sudden pain is apt to be hysterical and not limited to the ovarian region, but may be produced by pressure on almost any part of the body, in the epigastrium or on the top of the head particularly.

The faradic current is also used where great ovarian pain coexists with fibroids, endometritis, cellulitis, etc., for the relief of this pain. This is immediately followed by the galvanic current for whatever other condition is present.

The method for the galvanic current has often been described. An abdominal electrode made of potter's clay, wet enough to make it easily moulded, large enough to cover the abdomen, and about three-quarters of an inch thick, is wrapped in cheese cloth and placed upon the abdomen. The uterine electrode is a platinum sound, or, if the cauterization is to be localized, a hard-rubber sound with one extremity of carbon is used. This is introduced into the uterine cavity and the current very gently applied, while the expression of the patient is carefully watched. One should begin with a small dose, forty to fifty milliamperes at first, increasing the amount each time as the patient can bear it, until one hundred to two hundred milliamperes, or even more, can be borne. The application usually lasts five minutes, occasionally less, rarely more. After each treatment an antiseptic injection is given, and a tampon is placed in the vagina to prevent sexual intercourse. The patient then remains at the clinic at least two hours. Under no circumstances is this rest omitted.

If a galvano-puncture is required, it is made with a small steel trocar in the posterior or lateral cul-de-sac. The depth of the puncture should never exceed half a centimetre. Although very painful, some patients bear these punctures well without chloroform, but many require an anesthetic. When a puncture is made in cases in which hemorrhage is a prominent symptom, the positive pole is used, since this is the hemostatic; the positive pole is also used when the patient is very sensitive, since it is less irritating than the negative. But absorption takes place more rapidly when a negative puncture is made, hence the negative pole should be used when resolution is desired. The same

thing obtains in intra-uterine treatment: for hemorrhage the positive, for denutrition the negative pole should be used.

Subacute ovaro-salpingitis is a common cause of hemorrhage, and when hemorrhage is not checked by continued galvano-cauterization of the uterine cavity it is well to see if this is not present, or if there may not be a beginning epithelioma which has been overlooked. If neither of these be found, the conclusion is that the electricity has not been given in sufficient quantity, or that the intra-uterine electrode has not been well applied to the mucous membrane of the uterine cavity.

As to the toleration of the current, it may be remarked that cases of pelvic exudate do not bear as strong currents as cases of fibroid tumors or endometritis. Therefore, in treating an exudate, the greatest care must be exercised not only to adapt the current to the tolerance of the patient, but also not to continue it too long. An exudate will yield more quickly to galvano-puncture than to intra-uterine cauterization, but the pain of a puncture is much greater and often renders chloroform necessary.

At Apostoli's clinic the patient is put to bed immediately after a puncture, and remains there from one to three days.

Like most gynecological measures, electricity has its disadvantages as well as its advantages. It is long and tedious. The treatment must be continued for months often before the cure is complete, while the time required for each *séance* is a drawback to its use, in large dispensaries at least. It demands care, patience, and trained intelligence on the part of the physician, no less than confidence and courage on the part of the patient.

The cure is symptomatic rather than anatomical in many cases. As has been stated, exudates and adhesions disappear, and promptly; fibroids are reduced to one-half or one-third their size, and occasionally entirely disappear also; but the prolapsed uterus or ovary remains prolapsed, flexions and versions are seldom improved.

The treatment, also, is often followed by pain, which, however, is not excessive and is seldom of long duration.

On the other hand, the advantages are marked and well repay the time and care demanded. Compared with the classic treatment, the results are remarkable. Many annoying symptoms are immediately relieved. It is a common thing after a few treatments, often after the first, for the patient to report

herself infinitely better or quite well. The whole appearance and manner of the patient show improvement. She can walk better, go up and down stairs without fatigue, can do her housework or follow her calling in comparative ease. The pain is less, the weight and dragging in the abdomen gone, vesical symptoms are relieved, and constipation is overcome. She eats and sleeps better. Moreover, she is not obliged to suspend her work during the treatment, except for a puncture. Hemorrhage is quickly arrested and controlled. The treatment is clean and without danger. Apostoli's results have justified his method. He has earned his title of master, and sooner or later must receive the credit which is his due.

The following histories, obtained during attendance at the clinic from November, 1888, to June, 1889, are offered as representing fairly the details of the treatment in various cases, although the patients are still under observation.

CASE I.—Madame D., perfumer, 20 years old, nullipara, presented herself at the clinic February 19th, 1889, for severe pain in the abdomen, on account of which she had been obliged to discontinue her work.

Nothing of note in the family history, except that her father died of pulmonary tuberculosis at 42. As a child the patient had chronic tonsillitis and frequent attacks of croup. For some months previous to the appearance of the menses she was troubled with leucorrhea. Menstruation established at 14, regular; severe dysmenorrhea for three days before the flow, which lasts six days but is not profuse. Patient obliged to remain in bed one or two days during each period on account of the pain. At 17 she had an attack of hysteria, but did not entirely lose consciousness. Has had similar attacks at intervals since. Married at 20. No sexual intercourse for the first four months after her marriage. At the end of three months a physician was consulted, who incised the hymen and dilated the vagina. The first and only coitus followed one month later.

Actual condition February 19th.—Menstruated from the 10th to the 17th of February. The period was preceded by the usual three days' pain, and followed by a watery discharge which still continues. Walking is difficult, attended by increased pain in the abdomen and thighs. Frequent micturition: is obliged to rise three or four times during the night; burning after the urine is passed. Constipation, headache, frequent attacks of hysteria. Not much appetite, but digests well and sleeps well. Complains chiefly of pain on defecation, and darting pain in the right iliac and in the anal regions. Right ovarian region sensitive. No internal examination.

Hot vaginal injections twice daily of creolin were ordered and patient kept under observation.

March 19th.—Menstruated from the 9th to the 15th of March, slight watery discharge after the period. Complains of pain in the right iliac fossa and about the anus. Defecation difficult. Purulent discharge from the urethra. Pain in the ovarian regions, more pronounced on the right. On vaginal examination, the cervix is found low in the pelvis, os partly open, slight retroflexion, endometritis; sound measures $7\frac{1}{2}$ cm. To the right of the uterus, and apparently continuous with it, a hard mass is felt, the size of an egg, elongated, flattened, and movable—probably an exudate involving the tube. Examination *very* painful.

March 30th.—After the examination, patient suffered from severe pain in the abdomen and from nausea. To-day, under the influence of chloroform, this diagnosis was established: Purulent urethritis, retroflexion, endometritis, complete prolapse of the ovaries in Douglas' pouch, right ovaro-salpingitis.

With one hand making pressure on the abdomen, that the mass on the right of the uterus may be more easily reached, and while the patient was still under the chloroform, the first positive galvano-puncture was made in the right tube lying in Douglas' pouch; the small steel trocar was introduced to the depth of $\frac{1}{2}$ cm., as near the ovary as could be determined; 50 milliamperes, 5 minutes. Antiseptic injection, iodoform tampon.

April 2d.—Patient remained in bed at the clinic until the evening of April 1st, when she walked home. She vomited a little after the treatment, and had a slight diarrhea, but had no unfavorable reaction of any kind. The temperature taken after the treatment, and each morning and evening since, was 37° R. This afternoon patient reports herself as very well. All lumbar, abdominal, and anal pain has disappeared, except during defecation, when she has pain in the right thigh. She can walk without difficulty, eats and sleeps well, and feels ready to resume her work, which had been discontinued before her first visit to the clinic. She complains of a frequent desire to urinate, and burning after the act. Tampon removed and found to be stained with a serous discharge. Injection of sublimate given and tampon renewed.

April 4th.—Patient reports pain in the right thigh posteriorly, like sciatica. This morning had nausea, but did not vomit. Intermittent burning pain in anal region. No return of lumbar or abdominal pain. On abdominal palpation, absence of all sensitiveness in right ovarian region, very little in the left. Vaginal examination shows very much less sensibility in the cul-de-sacs, particularly in the region of the puncture.

April 6th.—Began to menstruate on the 4th, and for the first time in her life was not obliged to remain in bed. Although menstruating, patient feels very much better. Examination shows a marked diminution in the exudate at the right of the uterus.

April 9th.—Menstruated from the 4th to the 9th of April, more profusely but not as long as usual. Declares herself very much improved. Has resumed her housework, and does it easily. Goes up and down stairs without fatigue. Antiseptic injection, tampon of iodoform gauze.

April 20th.—Exudate continues to diminish; no other change. Injection, tampon.

April 23d.—Complains that the tampon hurts her, and of a little pain in the right iliac region. Injection, tampon.

April 25th.—Patient says she is very well; continues her housework without too great fatigue; reports slight pain on the left side. Injection, tampon.

April 27th.—Patient says tampon annoys her, and complains of *malaise*, which she thinks is premenstrual. Injection, tampon.

April 30th.—Some fatigue, slight white discharge, tampon badly borne. Injection, tampon.

May 2d.—Began to menstruate this morning; did not remain in bed; no marked pain.

May 4th.—Still menstruating, but is able to do her work. For the second time in her life—both times since the galvano-puncture—menstruation has been painless, attended only by a feeling of *malaise*.

May 7th.—Still menstruating a little; reports that she can remain standing several hours without much fatigue. On examination, the tumor is found very much smaller; almost no sensibility on deep pressure.

May 11th.—Patient has resumed her work in perfumer's shop; still has purulent urethritis.

May 14th.—Has a slight cough, some pain on right side, slight leucorrhea. No appreciable tenderness on vaginal examination.

May 18th.—Vaginal examination shows the tumor is appreciable but is still diminishing. Deep pressure in the right cul-de-sac induces pain in the anal region.

May 23d.—Reports herself as quite well; no longer has pain after micturition. Purulent discharge from the urethra much less. Patient kept under observation, and ordered to come to the clinic from time to time.

CASE II.—Madame H., housewife, age 44, married; 2 children, 1 miscarriage. Came to the clinic February 23d, 1889. Nothing important in family history. As a child, patient was healthy. Menstruation established at 16, regular, painless, of four days' duration. Leucorrhea after the flow. Married in 1869 at 23 years. A year later first child was born, confinement at term and normal. One year after, second confinement at term. Three years after this, miscarriage at the third month. Did not remain in bed, but has never been well since. Abdomen has been sensitive; patient has been easily fatigued and has suffered at the menstrual periods.

In August, 1888, patient was taken ill. She had a chill, vomiting, headache, severe abdominal pain, and the abdomen

was swollen. The physician called made a diagnosis of pelvic peritonitis. Patient was taken to a hospital, where she remained three months. Was very weak when discharged in November.

In December, 1888, and January, 1889, had her regular period, which was preceded by severe pain and lasted four days. In February the flow lasted nine days, was very painful, and, for the first time, clotted.

Actual condition February 20th.—Menorrhagia. Walking very painful and difficult, riding impossible. Pain in the abdomen, and for the last month in both thighs. Has not been able to do her housework since August. Appetite good, but is nervous and does not sleep well. On vaginal examination, an exudate is found filling the posterior and lateral cul-de-sacs, more pronounced at the left than at the right, so smooth and hard that two physicians made a diagnosis of a fibroid. Uterus small and immovable, left lateral version. Sound measures six and one-half centimetres. Suitable case for galvano-puncture, but to accustom the patient to the treatment it was decided to begin with the galvano-caustic. I. Galvano-caustic, positive, platinum sound, 40 milliampères, 5 minutes, sufficiently well borne.

March 2d.—Patient remained at the clinic two hours after the treatment; went home in the street car and bore the journey very well. Says she can walk better and sleeps better. Ordered to take hot vaginal injections of creolin twice daily.

March 7th.—Patient says she is better; notices most improvement in walking. II. Galvano-caustic, positive, platinum sound, 50 milliampères, 5 minutes, well borne.

March 16th.—Did not suffer after the treatment. Had a slight hemorrhage March 9th and 10th. Has constant pain in the lumbar region, but can walk much better; can also ride, which she has not been able to do before. Says she is much relieved. Internal examination shows some depressions in the exudate; the cul-de-sacs are more accessible and better marked.

March 19th.—The exudate is more concave and not as hard.

March 30th.—Menstruated from the 19th to the 23d of March; pain during the period, but none preceding it. For the last five days has not been as well. Suffered from backache and great fatigue. Sleeps well, but has little appetite; nervous. Says her abdomen is swollen. Frequent desire to urinate. III. Galvano-caustic, positive, platinum sound, 50 milliampères, 5 minutes, sufficiently well borne.

April 2d.—Since the treatment, patient has suffered from giddiness, fever, pain in the abdomen and back, sleeplessness. Her appetite has returned, but she feels much worse.

April 4th.—Same condition.

April 6th.—Somewhat better. Abdominal pain has gone, but has much pain in the back and thighs.

April 9th.—Much better, but the backache persists. In spite of it, says she can remain on her feet a part of the day, and can assist in the work of the house, which she has not been able to

do for eight months. IV. Galvano-caustic, positive, platinum sound, 100 milliampères, 5 minutes, well borne.

April 18th.—After the treatment, had rather a profuse hemorrhage, which lasted two days; pain in the abdomen during this time. Great general fatigue, nervous, sleepless, without much appetite. On internal examination, the uterus begins to be movable laterally, but is still fixed to the sacrum.

April 20th.—Still complains of muscular fatigue, but has begun to do all her housework. Sleeps better, and says walking is all the time becoming easier. V. Galvano-caustic, positive; 80 milliampères, 5 minutes, well borne.

April 23d.—Did not suffer after the treatment; says she is better in every way. Internal examination shows the exudate is much less and the uterus more movable.

April 27th.—Patient says she is not too much fatigued by doing her housework, and that she continues to improve. Wants to know if she must come to the clinic as often.

Up to the last of May patient came occasionally to the clinic, but presented no marked change either for better or worse. The question of galvano-puncture was considered, but had not been made up to this time, May 31st.

CASES OF UTERINE FIBROIDS FROM PRIVATE PRACTICE, AND THEIR TREATMENT.¹

BY

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THE cases which I report to-night are essentially clinical in their character, taken from private practice during a number of years past.

I have made no attempt at anything like an essay upon the subject of uterine fibroids, nor in discussing the treatment have I aimed in any degree to cover the question exhaustively.

I have stated the treatment followed in the cases reported, and purposely leave the subject open for discussion by the Society.

CASE I.—Mrs. B., aged 55 years, mother of six children,

¹ Read before the Washington Obstetrical and Gynecological Society, May 17th, 1889.

youngest 16 years of age. Has always been well nourished and in fairly good health, though not strong.

Last confinement in 1873. Labor normal, but involution slow.

In 1878 began complaining of heavy feeling in pelvic region, backache, and pain down limbs. Vaginal examination revealed hypertrophy of uterus and retroversion, and tumor in anterior wall of uterus near the fundus. She was kept in bed for several months, under treatment for endometritis and retroversion, until the uterus could be kept in place by a pessary. The tumor enlarged to size of fetal head, and could be readily felt above the pubes.

She was put upon fluid extract of ergot treatment—from twenty drops to a teaspoonful three times a day, according to the amount of hemorrhage—and took it constantly for one year, and most of the time for five years. The ergot did not disagree with her in any way, but she frequently became very tired of taking it.

She was 44 years of age when the tumor was discovered, and she did not have the menopause until 50 years of age. During this time menstruation was profuse, lasting seven or eight days, and recurring every two or three weeks. By the use of the ergot, however, it was kept within bounds, and she was able to attend to household duties and measurably enjoy life. She was assured that the tumor would diminish in size and give her no further trouble after the menopause. This turned out to be the case, although the climacteric did not occur until the age of 50, the menstruation being prolonged, as is usual in fibroids of the uterus. She is now 55 years old, and has enjoyed good health for the past five years. The tumor can no longer be felt above the pubes, and only with difficulty through the vagina.

CASE II.—Mrs. L., aged 41 years, brunette, rather stout. Has always been in good health, with the exception of uterine disorders. Menstruation has always been profuse. Has been married twenty-two years; never had any children or been pregnant. Had an attack of pelvic cellulitis when 15 years old, caused by jumping from a wagon. This was followed by excessively painful menstruation. This latter trouble was treated by Dr. Theophilus Parvin by dilating the uterus with sponge-tents. No cellulitis followed the use of the tents on this occasion.

My first attendance was in 1872, for malaria. Following the malaria ensued an attack of pelvic cellulitis, for which she was under treatment for several months. During the winter of 1873, the os uteri was dilated with sponge-tents, with the double object of relieving the dysmenorrhea and removing the sterility. This use of tents caused an attack of cellulitis. Subsequently, on recovery from the cellulitis, an attempt was again made to cure the sterility by dilating the os with sounds, but without effect.

March, 1881.—In making an examination in consequence of pain and menorrhagia, a tumor the size of a cocoanut was dis-

covered low down on the right side of the uterus, which caused pain in the bladder and rectum by pressure. The tumor was diagnosed as a subperitoneal fibroid connected with the uterus. A belladonna plaster was applied, and fluid extract of ergot, fifteen drops three times a day, ordered, the dose to be increased to a teaspoonful if necessary for hemorrhage. It was taken in this way pretty constantly for eight years, up to the present time. The second tumor made its appearance five years ago, in 1884. It was low down on the left side, and about one-third the size of the first mentioned. This added to the distress from pressure and menorrhagia. The latter symptom was always fairly well controlled by the ergot, so that Mrs. L. was able to be about and enjoy life to a reasonable degree. The third tumor appeared in the spring of 1888, one year ago, is situated in the anterior wall of the uterus, and is about the size of a fetal head. Since the development of the last tumor, there has been a great increase in the menorrhagia, the flow continuing two weeks, and sometimes so profuse as to be alarming. The ergot in full doses controls it only to a limited extent, and the general effect of the ergot is so unpleasant that the patient will only take it in full doses as an absolute necessity. This peculiar effect of the drug I will refer to again. It was proposed to try electricity with a view to controlling the hemorrhage, and in the hope that it might stop the growth of the last tumor, if it did not cause it to diminish in size. This was readily assented to by the patient, and treatment by electricity was begun October 6th, 1888. At this date the following was the condition: Four fibroids found—two subperitoneal in the right iliac region, one measuring five inches in length, the other three and one-half inches, and irregular in shape; one tumor in left iliac fossa three and one-half inches long, subperitoneal. All of these tumors have become smaller under the use of ergot during the past two years. A fourth tumor, which has appeared within a year, is globular and in the anterior wall of the uterus, four and one-half inches in diameter. Since the development of the intramural tumor, menorrhagia has become worse. Electrical treatment: Battery used is Waite & Bartlett cabinet, 40 Leclanché cells, constant current.

October 6th.—8 cells. Positive pole over abdomen—7 × 9 wire gauze electrode wrapped in soft towel saturated with salt water. Negative pole in the uterus—50 milliamperes, 15 minutes. Then current was reversed for 5 minutes. Resistance, 200 ohms. Distention of speculum caused pain. 13th.—Electrodes as before, + on abdomen, — in utero, 7 cells, 50 milliamperes, 20 minutes.

November 16th.—10 cells. + over abdomen, 30 milliamperes, — on lumbar region, 30 minutes. Reverse 10 minutes, + in utero. 20th.— + on abdomen, — on lumbar region, 10 cells, 40 milliamperes, 15 minutes; + in utero, — on abdomen, 3 cells, 20 milliamperes, 15 minutes.

December 5th.—9 cells, 40 milliamperes, 15 minutes, and re-

verse. Dr. H. L. E. Johnson assisting. 11th.—9 cells, 45 milliampères, + on abdomen and reverse, 15 minutes. 14th.—8 cells, 45 milliampères, 15 minutes. Reverse. 29th.—7 cells, 25 milliampères increased to 40 milliampères. Last period continued 9 days.

January 2d.—8 cells, 40 milliampères. 15 minutes, and reverse 10 minutes. 5th.—10 cells. 50 milliampères, 15 minutes. Reverse. 8th.—8 cells, 50 milliampères, 15 minutes, and reverse. 24th.—As above. Menstruated from 13th to 22d, 9 days; quite profuse and painful. 29th.—9 cells, 50 milliampères, + in utero, 15 minutes. No pain.

February 5th.—7 cells, 45 milliampères, + in utero, 15 minutes. 20th.—Has been menstruating 13 days; used 35 napkins: no pain. Took during the time decoction of $\frac{1}{4}$ lb. cotton-root bark, which seemed to prevent pain but did not check hemorrhage.—10 cells, 55 milliampères, + in utero, 15 minutes. Central tumor lower down, but not reduced in size.

From this time, February 20th. the use of electricity was discontinued. It seemed to do no good, and its application was attended with much suffering. It was impossible with one pole in utero to use stronger currents than fifty milliampères, on account of the pain produced, both at the time of application and continuing for hours after her return home.

The use of electricity in this case was unsatisfactory, both as to relief of the hemorrhage and relief of pain.

There was also no perceptible effect on the size of the tumors. But this latter was not to be expected from the strength of currents and mode of application. The pain caused by the electricity was described as a bearing-down and intolerable aching pain—evidently from contraction of the uterine muscle.

As to the use of ergot in this case, the fluid extract was used and taken nearly constantly for eight years, in doses of from fifteen drops to a teaspoonful three times a day. The effect in controlling hemorrhage was very decided, the larger dose being used when necessary for that symptom. The smaller doses were taken during the interim. The first and second tumors became smaller under the use of this drug, and I am certain that without it Mrs. L. would have been confined to bed most of the time, whereas she was able to attend to her household duties, go about and enjoy life.

The ergot, when taken in teaspoonful doses, caused pain in the rectum and bladder, apparently from pressure of uterine contraction.

The ergot also produced a peculiar effect to which I wish to call especial attention, since it was uniform and very marked. and I have not seen it referred to in the literature of this drug. This was a peculiar depression of spirits with hysterical phenomena, more marked when taking the full doses of the fluid extract, less marked when using the suppositories of ergotin.

I neglected to state that for the past three years she has been

using the suppositories of ergotin (0.30) three times a day, instead of taking the medicine by the stomach.

After taking the ergot for three days in full doses, she feels like crying all the time, then on the fourth day is angry with every one and displeased with everything, and wants to quarrel ; will lie in bed and cry all day ; easily irritated—while her natural disposition is just the opposite, even-tempered and exceptionally pleasant. The family soon came to recognize the state of mind and respected it accordingly. Husband and servants were very careful not to aggravate it, and even the little adopted daughter would say: "Mamma is taking ergot." In consequence of this disagreeable action of the ergot, I tried to find a substitute, and on February 5th, 1889, prescribed the tea of cotton-root bark, which she has been drinking since that date to the present.

The tea is prepared according to the directions of Dr. Garrigues in the *Quarterly Bulletin of the Clinical Society of the New York Post-Graduate Medical School and Hospital*. The directions are to boil three heaping teaspoonfuls of the powdered root in a pint of water for fifteen minutes, and when cool, strain. Of this one-third is to be taken in the morning, one third in the afternoon, and one-third at bedtime.

Dr. Garrigues has used the cotton-root bark in one hundred and thirty-nine patients, in most of them with decided benefit. He has found that it checks the bleeding of uterine fibroids and also lessens the associated pain, while in carcinoma and sarcoma it limits or altogether suspends for the time the hemorrhage. He insists that the remedy should be used in the form of a freshly made decoction, and states that it fails to produce any benefit in about ten per cent of the cases, which is certainly not an unsatisfactory showing. In the case here reported, it failed entirely to relieve the hemorrhage, and ergot suppositories had to be resorted to for that purpose ; but it did relieve the pain and made the patient more comfortable. She rather liked the cotton-root tea as a beverage, and still takes it for its sedative effect.

CASE III.—Mrs. S., a blonde, aged about 40 years, well developed. Previous health good. Has been married twenty years and has two daughters, aged 18 and 5 years. No miscarriages. Has suffered from menorrhagia for two years ; menstruation on time, but lasting sometimes for two weeks. Has had profuse hemorrhages for three months, without pain. In good health otherwise, except from the exsanguination. Is pale, anemic, weak and weary from the continued loss of blood.

I was first consulted February 16th, 1888. Found uterus enlarged; cavity three and one-half inches; os patulous. Hard tumor in anterior wall just inside of os internum, apparently about the size of a hen's egg. Can be felt readily both by internal and external manipulation. Prescribed fluid extract ergot, teaspoonful three times a day.

February 16th.—Applied electricity. Abdominal electrode, wire gauze, 5×7 , wrapped in towel and thoroughly saturated with salt water. Positive over abdomen. Negative platinum, intra-uterine. Ten cells Leclanché. 50 milliampères, for 7 minutes. Resistance, 300 ohms. Thick muco-purulent discharge from uterus. Electricity caused no pain. 18th to 20th.—Severe hemorrhage and pain. 21st.—Uterus smaller and firmer. Galvanism, 12 cells, 54 milliampères, 8 minutes. No pain. Positive in uterus. Resistance, 200 ohms. Hemorrhage continued, and on March 9th I was sent for. Found the anemia extreme, with corresponding exhaustion. A soft white mass was presenting at the os. Uterus dilated with Goodell's dilator, and a mass, in amount about a tablespoonful, removed. Strong solution of tannin in glycerin applied to endometrium, and cotton tampon. This mass supposed to be a mucoid polypus. After this the tannin and glycerin were applied daily and the hemorrhage ceased. The uterus at this time was firmly contracted, and the fibroid in the anterior wall was just beneath the mucous membrane. Between the dates March 18th and April 10th the tumor was extruded through the endometrium and appeared at the os, dilating it just as in miscarriage; it was firm, hard, and tough. The finger, passed into the uterus and around the tumor, found a firm pedicle an inch in diameter.

April 10th.—The os being well dilated, patient under ether, the tumor was seized with vulsellum forceps, drawn down and held by an assistant, while, with a pair of long-handled scissors curved on the flat, the pedicle was carefully cut through, the cutting being guided by the finger in the uterus. The tumor was then readily removed. It was a typical fibroid the size of a duck's egg. The uterus was wiped out with a fifty-per-cent solution of carbolic acid, and glycerin and tannin pad applied. There was no further hemorrhage. Mrs. S. made a rapid recovery, soon gained blood and strength, and menstruated normally at the next period. It is now one year since the removal of the fibroid, and good health has been uninterrupted. Menstruation regular and normal.

In this case electricity was applied but twice. It had no effect in controlling the hemorrhage, but did cause contraction of the uterus. To the ergot and electricity I attribute the speedy expulsion of the tumor.

CASE IV.—Mrs. R., aged about 30, multipara. Was consulted in consequence of uterine hemorrhage and pelvic pain.

May, 1884.—Found on examination a polypus filling the uterine cavity and presenting at the os. Dr. J. Ford Thompson was called in consultation, and the tumor removed by the wire écraseur. Recovery was prompt and complete.

CASE V.—In March and April, 1885, attended a lady, several years past her climacteric, who was suffering from irritation of the bladder. Micturition frequent and attended by great pain. Urine normal. General symptoms of extreme prostration, and cachectic appearance. Examination disclosed a tumor in anterior cul-de-sac between uterus and bladder, the nature of which was uncertain. I thought it to be hematocele, but with this opinion Dr. J. Ford Thompson, who saw her in consultation, did not agree, but was inclined, from the general condition, to think there was cancer, if not in this tumor, somewhere in the pelvic cavity. She died, and at the autopsy no cancer was found, but two round, hard fibroid tumors one and one-half and two and one-half inches in diameter. No other pathological condition was noted, but the autopsy was very superficial on account of the objection of friends. The symptoms pointed to these tumors as in some way connected with the cause of death, but just why I have never understood.

Treatment of Uterine Fibroids.—This resolves itself into three divisions:

I. Symptomatic. II. By electricity. III. Surgical.

I. *Symptomatic.*—I mean by this, treatment of such symptoms as hemorrhage, pressure, etc.

Hemorrhage is the most important, and the one which most frequently threatens life. The drugs of most value for the hemorrhage are, in the order of their importance, ergot, cotton-root bark, hydrastis, nux vomica, hamamelis, and ammonium chloride. In addition to the administration of medicines by the stomach, of great value and importance are rest in bed and local treatment at the times of profuse hemorrhage. A late writer lays special stress upon tampons with vinegar to control the hemorrhage. Ergot in some form is the most valuable medicine we have at command in this condition. Its action is two-fold:

1st. By contracting the small blood vessels, and thus diminishing the amount of blood in the bleeding surface.

2d. Causing contraction of the involuntary muscular fibre of the uterus, which not only checks hemorrhage, but, in case of a fibroid tumor connected with the uterus, diminishes the supply of blood to this abnormal growth, thus checking its nutrition and limiting, or even lessening, its development.

Hildebrandt was the first to recommend, in 1872, its use subcutaneously for uterine fibroids, and reported a number of cases thus cured. The objection to this mode of administration is the pain produced by the injection.

The action of cotton-root bark is similar to ergot in causing uterine contractions, and in addition appears to have a sedative effect in relieving pain.

Hamamelis, or witch hazel, is referred to in this connection as a possible substitute for ergot and cotton-root bark in cases where they cannot be taken or have lost their effect.

In the Philadelphia *Medical News* of April 6th, 1889, Dr. Reeves Jackson recommends fluid extract of hydrastis, 20-drop doses, or hydrastin, $\frac{1}{4}$ (0.015) to $\frac{1}{2}$ (0.03) grain, in hemorrhage from uterine fibroids, and Dr. Baer recommends strychnia in combination with ergot.

II. *Treatment by Electricity.*—This paper has already grown so lengthy that I shall content myself by referring very briefly to electrical and surgical treatment of fibroids, and leave details to the discussion by the Society.

Treatment by electricity naturally divides itself into the expectant and the radical treatments: *expectant*, to relieve suffering, control hemorrhage, and stimulate the uterus to contraction; *radical*, to cause the absorption of the tumors by electrolysis, after the manner of Apostoli.

My experience—which is very limited—with the use of electricity for controlling hemorrhage and relieving pain has not been satisfactory. In Case II. it entirely failed to be of any benefit, and increased instead of relieving the suffering. In Case III. it was of value in hastening the expulsion of the tumor by stimulating uterine contraction, but it did not diminish the bleeding.

With the methods of Apostoli and other operators in electrolysis I have no experience whatever. It appears to me that this plunging of a needle into a tumor through the abdominal walls or through the uterus or vaginal walls, and the use of such powerful currents, cannot be devoid of risk, and I should class it as among capital surgical operations.

III. *Surgical Treatment.*—The important questions for discussion are the value of surgical interference in the removal of the tumors themselves, and the value of oöphorectomy.

A REPORT OF EIGHTY CASES OF RAPID DILATATION OF
THE UTERINE CANAL FOR THE CURE OF DYSMENOR-
RHEA AND STERILITY.¹

BY
FRANKLIN TOWNSEND, A.M., M.D.,
Albany, N. Y.

I TAKE particular pleasure in presenting a report of the results following the operation of rapid dilatation of the uterine canal under ether, as suggested by Goodell, in conditions, 1st, where severe and intractable dysmenorrhea was the most prominent symptom in unmarried women; 2d, or where sterility existed, either accompanied by dysmenorrhea or not, in those married.

From a careful analysis of over eighty cases operated upon by me for the relief of these conditions, I am led to believe sincerely in the beneficent results following this method of treatment.

Formerly it was my custom to dilate the cervical canal where stenosis existed, by a process of gradual widening by Peaslee's dilators, uterine sounds of steel, Sims' method, etc. Suffice it to say that success never appeared to attend my efforts in bringing about immediate relief, even after a very extended trial; though, I believe, in the hands of some others gratifying results have occasionally been secured.

From the time that Goodell made his report on "Rapid Dilatation of the Uterine Canal" (Trans. Obstetrical Society of Philadelphia, 1884), I ceased using the old method of gradual dilatation, and substituted the rapid method, with results most gratifying and noteworthy, as will be seen from the following tables:

Dilatation in virgins for dysmenorrhea, all other means failing, 57	
Complete cure.....	53
No better.....	3
Made worse.....	1

¹ Read by title at the meeting of the American Association of Obstetricians and Gynecologists at Cincinnati, Ohio, September 18th, 1889.

Dilatation in married women for dysmenorrhea and sterility, other means failing.....	23
Complete cure of dysmenorrhea.....	23
Complete cure of sterility.....	17
Remaining sterile two years or more after operation...	6

INDICATIONS FOR AND AGAINST THE OPERATION.

For Operation.—For an operation of this nature to be successful, it is essential that the pelvic peritoneum, cellular tissues, and uterine adnexa be in a normal condition; and when these are not so, failures may be expected. Endometritis and metritis, even with retro- or ante flexion, are not in themselves necessary barriers to the operation. The straightening of the uterus, with permanent free drainage from the cervical canal, is sufficient in itself as a means for the cure of the flexions, metritis, and endometritis which may exist. Indeed, it must be freely confessed that when cervical stenosis exists, endometritis, with or without metritis, is pretty sure to be found. There may or may not be flexions.

Against Operation.—It would seem utterly futile, and even dangerous, to operate in cases where pelvic peritonitis or cellulitis exists; and should salpingitis, no matter what the character, be present, the result of such procedure is almost a foregone conclusion—failure. These conditions must first be properly treated, especially perimetritic and cellutitic inflammatory troubles, and done away with entirely, if possible, before dilatation is practised.

It is absolutely essential that for success to follow this operation the cases must be carefully selected.

Again, it has been my experience to find failure following what I would now recognize as an incomplete operation—I mean an operation where all the steps were not thoroughly carried out.

Assuredly “rapid dilatation of the uterine canal” does not mean rapidly dilating the canal under ether, possibly from one-quarter to one-half of an inch, or even an inch, and then leaving the patient, trusting to Nature to do the rest. Such procedure is a thing of the past, I hope, when simple “stretching” of the canal a trifle, without even the use of an anesthetic, was deemed sufficient to work out marvellous results.

From a careful study of my cases, complete records of each having been kept, I am convinced of the absolute inutility of

this operation as just expressed. Possibly temporary amelioration of symptoms may follow simple dilatation of the narrow cervical canal, but in time the patient is equally as miserable as before operation. The patency of the canal caused by the dilatation will not remain permanent, even where rupture of the muscular fibres about the internal os takes place, unless it be kept so by the use of some such instrument as the stem pessary, which not only aids in this manner, but also acts very efficiently in straightening the whole uterine organ.

I am aware that there are many who hold that the use of such an instrument is a most dangerous procedure in any case; but I think that such views are greatly exaggerated, as in no instance have I seen any untoward results following the introduction and continued use of this form of pessary. This may possibly be accounted for by the carefulness exercised in its use, for I can readily understand that its careless introduction, with inadequate injunctions to the patient regarding possible dangers, might give, and in many instances no doubt has given, rise to most unpleasant or even dangerous results.

The various steps in the preparation of the patient for the operation, and those concerned in the operation, which have so uniformly yielded such excellent results, are simply these:

First.—The patient is to be operated upon a week, if possible, after her last menstrual period, thus giving sufficient time before the next flow for the healing of the uterine tissues, which near the internal os become bruised and lacerated; also the stem has opportunity to remain a sufficiently long time in situ to materially interfere with any serious narrowing of the cervical canal.

Second.—The rectum being previously unloaded by enemata, the bladder emptied, and the vagina thoroughly irrigated with a warm, clean solution of bichloride of mercury, one in five thousand, the patient is considered prepared for the operation.

Third.—All instruments used are to be thoroughly cleaned and laid in a pan containing warm bichloride solution, one in five thousand. The essential surgical armamentarium is limited, consisting of a Sims speculum, a double or single tenaculum forceps, and Ellinger's uterine dilators, corrugated ends, large and small size, as modified by Goodell; stem pessaries of plain vulcanite, or Thomas' galvanic stem pessaries, none to be longer than one and a half inches, sponge holders, tampons of prepared

cotton or wool soaked in a thirty-per-cent solution of boroglyceride.

Fourth.—After the patient is thoroughly anesthetized, placed in Sims' position, and the speculum introduced and held by an assistant, the operator seizes the anterior cervical lip with the tenaculum forceps and gently draws down the uterus to near the vulvar orifice. This procedure tends to straighten the uterine canal for the introduction of the small dilator, which, when introduced beyond the internal os, is slowly opened until it is thought that sufficient dilatation has been reached for the introduction of the large Ellinger, whose blades should be separated to the extent of an inch, as marked on the scale placed near the handle—this being accomplished more or less gradually, and not by rude, quick measures; the stem is then introduced, the tenaculum and speculum are removed, the vagina tamponed, and a rectal suppository of opium one and one half grains, belladonna extract one-half grain, and hyosciamus extract one grain, introduced.

Fifth.—Should there be pain over the hypogastrium, as is very frequently the case, a flaxseed poultice, with tincture of opium, is applied. The urine is to be drawn, if necessary, for a day or two. Usually by a week's time the patient is able to be out of bed, and, provided *no pain* is occasioned by the presence of the stem pessary, it is to be left until just before the next menstrual flow, when it is to be removed and again inserted after the period.

It was noticed, when referring to the results of rapid dilatation in virgins, that out of fifty-seven cases four were failures—that is, they were no better after the operation than before it, and one was made much worse.

This last case was that of a girl, aged nineteen, suffering from an acutely anteфлекed uterus with a narrow cervical canal and conical cervix ("pin-hole" os externum). It was in the winter, when the days were short. The operation was begun late, darkness obscuring absolutely all specular observations. She took ether badly, and was only partially under its influence when the dilator was introduced into the cervical canal. There was no opportunity afforded for the use of the speculum, because of the darkness, and the whole operation was performed by the sense of touch alone; the dilatation of necessity, therefore, being but moderately and ineffectually performed, the patient

being "out from the anesthetic," and wildly tossing about the bed, almost before the blades of the instrument were withdrawn. Naturally, in this instance, no stem pessary could be used. Altogether I not only regarded the whole procedure as having been poorly and inadequately performed, but censured myself severely for allowing my better judgment to be led astray in attempting the operation under the unpromising conditions. In this case pelvic peritonitis was promptly developed, and it took quite three months before the young woman was on her feet again. No one was more to blame than the operator, and I made up my mind to never allow myself a second time to be caught in a similar predicament.

In the other three cases which proved failures, the operation was repeated in two of them after an interval of three months, and one was operated on three different times with no good results. All of these, I believe, remain sufferers from dysmenorrhea at the present time. In all these latter cases, the operation was performed with the same care and accuracy already mentioned as being so essential to success.

As to the operation for overcoming conditions of sterility, I can only say that the results were far beyond my expectations. Referring to the table (p. 1272), it will be noted that *all* were suffering from dysmenorrhea, and that the operation was productive of relief in *all* of the twenty-three cases; also that seventeen out of this number became fertile sooner or later after the operation—assuredly a good percentage.

In this connection a pertinent question naturally arises, and one difficult to answer: Did the operation put the patient in a more favorable condition for conception? Or might it not have been that these patients would have conceived without such operative interference?

In answer I can only say that in all but three of these cases operated upon pregnancy became evident after a few months, that is, within a year. Of three going beyond a year's time, one conceived at the fifteenth, one at the seventeenth, and one at the twentieth month after the operation.

As to the duration of the sterility in these cases, I append a table which goes to show that in all of the twenty-seven cases more than two years had elapsed since they married, the minimum length of time being twenty-eight months and the maximum being nine years.

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As to whether these cases, if left to themselves, would have conceived, I am not prepared to say; but I feel assured from the evidence that the operation placed them in a much more favorable condition than had they been left alone.

Case.	No. years sterile.	Conception following operation.	Age.	Dysmenorrhœa.
1	2 years, 4 months.	2 months.	27	Yes.
2	3 " "	3 "	24	"
3	3 " 2 "	3 "	24	"
4	3 " 3 "	6 "	27	"
5	3 " 3 "	3 "	26	"
6	3 " "	2 "	25	"
7	3 " 8 "	8 "	29	"
8	4 " 1 "	3 "	31	"
9	4 " "	4 "	33	"
10	4 " 6 "	3 "	29	"
11	4 " 8 "	4 "	25	"
12	4 " 9 "	5 "	27	"
13	5 " "	6 "	27	"
14	5 " 6 "	7 "	30	"
15	5 " 8 "	8 "	32	"
16	5 " 9 "	4 "	31	"
17	6 " 7 "	5 "	29	"
18	6 " "	15 "	28	"
19	6 " 1 "	10 "	29	"
20	6 " 3 "	9 "	27	"
21	6 " "	5 "	26	"
22	7 " "	17 "	38	"
23	7 " 1 "	11 "	30	"
24	7 " 3 "	5 "	32	"
25	7 " 10 "	20 "	29	"
26	8 " "	4 "	31	"
27	9 " "	7 "	35	"

A CASE OF PROLONGED GESTATION.¹

BY

G. N. ACKER, A.M., M.D.,

Attending Physician, Children's Hospital, Washington, D. C.

THE following case occurred in my practice this spring, and I desire to place it on record, because the facts justify me in regarding it as an authentic one, and also because the date of impregnation can be fixed with certainty.

¹ Read before the Washington Obstetrical and Gynecological Society, May 3d, 1889

The patient is the mother of four children and has had several abortions. The former gestations were of normal duration and the labors easy. In the fall of 1887 she had an abortion at the second month, and was sick for several months from the effects of it. She had retroversion of the uterus, and hemorrhage came on when she assumed a recumbent posture. This was treated by replacing the organ daily and holding it in position with tampons. She gradually gained strength, and made a good recovery. Early in 1888 (March) she had another abortion, near the third month, and was unwell for some time. It was necessary to treat her again for retroversion and hemorrhages. The menstrual periods became regular, and she had it for the last time that year from the 15th to the 20th of May. Her husband had connection with her on the 20th of May for the first and last time for months. She left the city a few days afterwards and went to the seaside. About the middle of June she wrote home that she had nausea and morning sickness, and thought that she was pregnant—a condition she dreaded very much. About the end of September she felt quickening. From these data I placed the date of confinement about the 27th of February, 1889. The gestation was a normal one, with the exception of several slight hemorrhages about the seventh month, which led me to suppose that I had a case of placenta previa to deal with, on account of the previous history of inflammation of the womb. With rest this threatened danger was safely passed, the hemorrhages ceased, and her condition was a good one. When March came without any signs of labor except some pains in the loins, I made an examination and found that the cervix was short and soft and that the os easily admitted the index finger. The head presented. As day after day went by without symptoms of approaching confinement, she became very anxious, not only fearing that the child would become so large that the labor would be a difficult one, but also because her husband had begun to suspect that the child did not belong to him, as it was much over the natural time and he knew the date at which he had connection with her. Every few days I made examination and found about the same condition, except the uterus was lower down, the cervix shorter, and the os wider. The motions of the child for several weeks had been very active, and even violent, especially at night, causing her much annoyance and discomfort. I directed her to use hot-water injections (vaginal), and dilated the os several times with the fingers in the hope of producing uterine contractions. Full doses of quinine were given. These measures did not apparently have any effect on the uterus.

I advised her to send for me as soon as she felt pains, for I was certain that the labor would be a short one, especially as the last one was only of five hours duration. She commenced to have active labor pains about 4 A.M. on the 23d of March, and at 6:15 A.M. was delivered of a fine girl baby. The child did not appear to be larger than one at full term, and the bones of the head and

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As to whether these cases, if left to their own devices, I am not prepared to say; but the evidence that the operation places the patient in a more favorable condition than had they been left to their own devices is upon the evidence that the operation places the patient in a more favorable condition than had they been left to their own devices.

Case.	No. years sterile.	Conception operated upon
1	2 years, 4 months.	2 years
2	3 "	3 "
3	3 " 2 "	3 "
4	3 " 3 "	3 "
5	3 " 3 "	3 "
6	3 " 3 "	3 "
7	3 " 8 "	3 "
8	4 " 1 "	4 "
9	4 " 1 "	4 "
10	4 " 6 "	4 "
11	4 " 8 "	4 "
12	4 " 9 "	4 "
13	5 " 6 "	5 "
14	5 " 6 "	5 "
15	5 " 8 "	5 "
16	5 " 9 "	5 "
17	6 " 7 "	6 "
18	6 " 7 "	6 "
19	6 " 7 "	6 "
20	6 " 7 "	6 "
21	6 " 7 "	6 "
22	7 " 7 "	7 "
23	7 " 7 "	7 "
24	7 " 7 "	7 "
25	7 " 7 "	7 "
26	7 " 7 "	7 "
27	7 " 7 "	7 "

Dr. A. F. A. King to be due in many cases of the pregnancy—if we take from the date of conception, May 20th, 1888, to that of delivery, March 7th, 1889, the gestation was three hundred and five days. There are no cases on record where the gestation has been prolonged to four months beyond the natural term. We know when impregnation occurred in this case (for there was a single coitus), and for this reason I thought the case a valuable one. Dr. James Arnott reported, in 1884, to the Boston Medical and Physical Society, the case of a patient whose mother had fourteen pregnancies, all extending beyond the usual period. The patient had five pregnancies, all being from ten to twelve months. The sixth was somewhat over time.

Dr. S. K. Jackson (*Journal Am. Med. Assoc.*, January 30th, 1886) reports a case that was four months delayed. This patient had previous inflammation of the womb.

Dr. D. A. McTavish (*New York Med. Journal*, April 13th, 1889) gives the history of a case that lasted three hundred and eighteen days. For two weeks the os was dilated to the size of a silver quarter. She also had pains in the back and anteriorly for two months. The previous history was good.

The literature of the subject contains such cases, and the regular works on obstetrics treat this subject fully, proving that though

normal term of gestation, yet among
and prolonging or shortening of
regards human gestation, is
law, but that the rule
occasional excep-
regularity Nature
deviation from the
anxious to ascertain the
a pregnant woman, we in-
last menstruation, when the
a, and when quickening was first
acts, we can, as a rule, place the date
a certain period. From some cause this
sturbed and the gestation become shorter

Interesting and difficult question for us to deter-
mine is the probable cause of prolonged gestation? In
connection with this naturally arises the question, What causes
labor to come on? If we consult the books we find many an-
swers given, such as the fetus being a prominent factor as the
determining cause of labor. The great naturalist, Buffon, held
that the fetus was the agent of its own expulsion. In this case
the fetus was very violent in its motions for three weeks be-
fore delivery, and caused much distress, yet this was not suffi-
cient to bring on the labor. Again, some have placed the de-
termining cause of labor in the cervix, comparing it to the
sphincters of the bladder and rectum. In this case I dilated the
cervix all that I could with my fingers, in order to provoke the
uterus to action, and was not successful, though the os was
wide enough to admit two fingers. It was also very soft, and
continued so for three weeks. The determining cause of labor
has also been placed—and I think with reason—in the matured
development of the muscular structure of the uterus, or, in
other words, when it has reached the physiological limit of its
growth. Anything that would retard this development and
maturity of growth of the uterine muscular fibres would delay
the period of labor.

In the history of this case we find that the uterus was the
seat of a long continued inflammation before the impregnation.
This condition would interfere with the proper development
of the pregnant uterus, and also diminish somewhat the muscu-

the sutures were in the same condition as usually found at full term. The placenta came away without any difficulty and was normal in every respect. During the labor I could not ascertain anything about the bag of waters. The lady stated that the membranes had not broken. The child was born with a caul, and there was very little if any water, as the bed was hardly soiled.

The patient in this labor acted differently from any of her previous ones, for she would not lie down, but insisted upon getting up and bending over. She said that this position made the pains easier. It was with great difficulty that I could make an examination, and even when the child's head rested on the perineum she wanted to get up. I expected, therefore, in this case, to find a very short cord. On the contrary, the cord was a very long one and entirely free from the child's head and body. Was the desire to get up and bend over to be attributed to the fact that there was so little water and that the membranes were intact? We all know that this symptom has been shown by Dr. A. F. A. King to be due in many cases to a short cord.

The duration of the pregnancy—if we take from the date of impregnation, May 20th, 1888, to that of delivery, March 23d, inclusive—was three hundred and five days. There are many cases on record where the gestation has been prolonged from one to four months beyond the natural term. We know the date when impregnation occurred in this case (for there was only a single coitus), and for this reason I thought the case a valuable one. Dr. James Arnott reported, in 1884, to the Bombay Medical and Physical Society, the case of a patient whose mother had fourteen pregnancies, all extending beyond the usual period. The patient had five pregnancies, all being from ten to twelve months. The sixth was somewhat over time.

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The literature of the subject contains such cases, and the regular works on obstetrics treat this subject fully, proving that though

ten lunar months is the natural term of gestation, yet among all animals there can be a marked prolonging or shortening of it. Bedford says that Nature, as regards human gestation, is not governed by any fixed or immutable law, but that the rule she observes is only a general one, subject to occasional exceptions. It is wonderful with what unfailing regularity Nature accomplishes her work. When any marked deviation from the regular way occurs, we are naturally anxious to ascertain the cause. When called upon to attend a pregnant woman, we inquire in regard to the date of last menstruation, when the morning sickness commenced, and when quickening was first noticed. Having these facts, we can, as a rule, place the date of confinement within a certain period. From some cause this reckoning can be disturbed and the gestation become shorter or longer.

The most interesting and difficult question for us to determine is, What is the probable cause of prolonged gestation? In connection with this naturally arises the question, What causes labor to come on? If we consult the books we find many answers given, such as the fetus being a prominent factor as the determining cause of labor. The great naturalist, Buffon, held that the fetus was the agent of its own expulsion. In this case the fetus was very violent in its motions for three weeks before delivery, and caused much distress, yet this was not sufficient to bring on the labor. Again, some have placed the determining cause of labor in the cervix, comparing it to the sphincters of the bladder and rectum. In this case I dilated the cervix all that I could with my fingers, in order to provoke the uterus to action, and was not successful, though the os was wide enough to admit two fingers. It was also very soft, and continued so for three weeks. The determining cause of labor has also been placed—and I think with reason—in the matured development of the muscular structure of the uterus, or, in other words, when it has reached the physiological limit of its growth. Anything that would retard this development and maturity of growth of the uterine muscular fibres would delay the period of labor.

In the history of this case we find that the uterus was the seat of a long continued inflammation before the impregnation. This condition would interfere with the proper development of the pregnant uterus, and also diminish somewhat the muscu-

lar irritability. Thus the labor could be delayed until the uterus had attained its full growth and its irritability was such that it would respond to the reflex stimulation.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

Stated Meeting, April 2d, 1889.

The President, DR. H. T. HANKS, in the Chair.

VAGINAL HYSTERECTOMY FOR EPITHELIOMA OF THE CERVIX UTERI.

DR. J. E. JANVRIN.—This specimen consists of a uterus removed between two and three weeks ago for epithelioma of the cervix. The woman, sixty years of age, was admitted to the Skin and Cancer Hospital about a month since, having had profuse and constant bleeding for six months. She was in an extremely bad general condition; was thin and weak, and, on account of poverty, had not received proper nourishment. I found a large epitheliomatous mass extending down from the cervix, quite encircling it except at the anterior portion. It broke down readily and was accompanied by profuse hemorrhage. I cleared this portion away as near to the base as possible, had the part dressed daily with iodoform gauze for about ten days, and got the patient ready for hysterectomy. The diseased tissue involved about three-fourths of the cervix. I made the anterior incision as usual; dissected away the bladder, keeping as close as possible, of course, to the uterine body; then dissected posteriorly and applied the forceps, two on either side, as I found that I was not able to inclose the broad ligaments perfectly, even with the long clamp that I have used in some other cases. I then separated the uterus from the broad ligaments with the Paquelin cautery knife, instead of cutting with the scissors. I did that on the spur of the moment, not because of any special advantage attached to it. The usual iodoform dressing was applied. The temperature did not afterward rise above 100° F. at any time. When I examined her last, the wound had closed nicely and she was in excellent condition in every respect.

DOUBLE PYO-SALPINX, WITH FISTULOUS OPENING INTO THE RECTUM.

DR. A. P. DUDLEY related the following case: A. S., æt. 31, admitted to hospital March 30th, 1889. Was married three years previously; lived with her husband one week, and shortly after

leaving him had gonorrhea. Two months after marriage she had a miscarriage accompanied by discharge of pus from the rectum. Was confined to bed for six months, having discharges of pus from the rectum daily. This condition continued, with slight improvement, up to admission into the hospital. Menstruation recurred every three weeks, being profuse and accompanied with pain.

Three years ago she came to my clinic with acute pelvic peritonitis, giving the history just read. She was suffering so severely that nothing could be done but put her to bed and use hot water and poultices. She drifted away, and did not come into my care again until about six weeks ago. She then had a discharge from the rectum, the cause of which will be described further on. I took her into the hospital, and kept her under treatment about two weeks, when she began to grow restless, and I hastened to perform laparotomy, which was done on Saturday last. The President had seen the patient with me. The pelvic contents were all matted together, including the small intestines, and it was with great difficulty that I could get to the tubes and ovaries. At one place where the adhesions were very firm I broke through two layers of the intestinal wall while separating it, which I had to repair by stripping up a portion of the peritoneum and stitching it over the rent. During my attempts to get into the pelvis, the tubal abscess on the left side ruptured and pus escaped into the abdominal cavity. On tearing up the adhesions, I found an ulceration into the rectum, distant about four inches from the anus. Below the opening into the rectum, extending down through the peritoneum into the recto-vaginal septum to a depth of about an inch and a quarter, was a pus cavity. This pus cavity probably connected with the pyo-salpinx. The ovary on the right side could not be separated from the broad ligament; consequently I tore it in two, cut it off, took a sharp curette and scraped the remainder off. But I hardly knew what to do with the pus cavity and the perforation into the rectum. Finally I decided to scrape the walls with the sharp curette. This procedure caused considerable bleeding at the time.

Having scraped out the pus cavity, I sewed the lower portion of the sigmoid flexure—the seat of the rectal opening—to the posterior wall of the uterus, turning the cavity in. Thus the healthy rectal and healthy uterine peritoneum were brought together, and the pus cavity and rectal opening were obliterated. Of course I had taken care to cleanse the cavity thoroughly and refreshen its surfaces so that fresh blood exuded. I had employed four large flat sponges with which to hold the intestines well up, to enable me to see into the pelvic cavity. The abdomen was washed with hot water and the abdominal wound closed. No drainage tube was inserted. It has been three days since the operation, and the temperature has been only 99° F., and to-day is normal;

the pulse 76. I gave her a Seidlitz powder at the end of twenty-four hours, part of which was rejected. It was followed during the day by another, which caused the bowel to move. There is no pain, no abdominal distention, no peritonitis, and I think the patient will get well without trouble. Digital examination to-night showed a little thickening around the former pus cavity, but no deposit of lymph.

DR. W. GILL WYLIE.—The method which I have adopted in such cases is a little different from that of Dr. Dudley. If necessary, I have first opened the abdomen to make the diagnosis clear. Then, before resorting to removal of the tube and ovary, I have punctured the abscess below the rectal opening through the vagina, and drained in that way, thus getting rid of the danger of a rectal opening into the general peritoneal cavity. I have succeeded in doing that in a number of cases without difficulty, and I think it is rather a safer operation than the one which Dr. Dudley performed. It seems to me he was fortunate in not having matter escape from the rectum into his wound, which would have added to the danger. I think he will yet have further abscesses in the pelvic connective tissue. Thus he may yet have to drain and pack from below before he gets rid of the trouble. The method which I have pursued is rather the more conservative. If, after establishing drainage through the vagina and thus getting rid of the abscess, I find the symptoms warrant it, I remove the tubes and ovaries, and without greater danger than usually attends that operation.

DR. POLK, after satisfying himself that he understood Dr. Dudley's method correctly, said: It seems to me Dr. Wylie is right in what he has stated, because there is no doubt one would get rid of certain immediate symptoms by establishing drainage through the vagina. Whether he would get closure of the rectal opening depends much upon the nature of the case. I have had cases of this sort in which I experienced the greatest difficulty in getting the rectal fistula to close, finally enucleating the whole thing, as Dr. Dudley did, and then obtaining the best of results. It is only, however, where the pus is in the immediate neighborhood of the vagina, not in the upper part of the pelvis, that I approve of puncturing through the vagina. That fact being understood, if you have adopted that procedure and the patient recovers, well enough. If subsequently it is necessary to make an abdominal incision, you can do so safely, the rectal fistula having closed. But if the fistula does not close, you will find yourself facing precisely the difficulty met by Dr. Dudley. What then shall be done with the fistula at the bottom of the rectal opening? Under such conditions, we know very well that the rectum, as a rule, is bound firmly to the pelvic wall, either posteriorly or laterally. While it could be freed (not from the mesorectum) so that it could be drawn up, yet you could not draw it sufficiently high to readily reach a perforation four inches from the anus. So that in the end you would be under the necessity of attempting to close this hole down at the bottom of the pelvis, and I understand that Dr. Dudley took those facts into consideration. Of course you could pack the cavity with iodoform gauze, put in a drainage tube, and establish a recto-abdominal fistula: but, after all, that is a horribly wretched condition to leave a

patient in. Sometimes, however, these fistulæ close just under those conditions, probably as often as they fail. I would ask Dr. Dudley what tissues he brought together in closing the cavity.

DR. DUDLEY.—I passed the stitches through the two coats of the sigmoid flexure of the colon and through the peritoneum on the posterior surface of the uterus, first on one side and then on the other.

DR. POLK.—It was certainly an ingenious procedure, but I should fear to try it. I think Dr. Dudley would have got as good a result had he put in a drain and packed the cavity with gauze. For, in passing the sutures as he did, there is much risk of passing them all the way into the sigmoid flexure. If that should happen, the sutures would become septic and cause ulceration. With ulceration in the peritoneal cavity, trouble would probably arise. That, however, is theoretical. The doctor has, up to the present time, had a good result. But it seems to me that in the first instance the method suggested by Dr. Wylie is simpler and safer.

DR. WYLIE.—I think Dr. Dudley has made a mistake. This case may turn out well, yet it may not. If he had made drainage through into the vagina, I could understand that it was good surgery; but, as it is, I think he has set a dangerous precedent. Where, as Dr. Polk has said, there is pointing into the vagina, it is not necessary to open the abdomen at all before establishing drainage through the vagina. But I do not advocate puncturing where there is uncertainty. It is then better to open the abdomen and find out whether or not drainage can be established through the vagina. But I certainly should not shut up a cavity like that in Dr. Dudley's case, in the pelvis or anywhere else, if drainage could be established simply by going through the vaginal wall. Although the patient has got along well for two or three days, there are yet chances for pus to form, in which event it will still be necessary to go through the vagina, if not to perform a more serious operation.

DR. JANVRIN inquired whether Dr. Dudley found it impossible to close the fistula in the rectum.

DR. DUDLEY replied that he did not find it impossible to close it, but it was surrounded by so much thickened tissue—the result of inflammatory action—that he did not think it would heal by primary intention. Aside from that, he wished to close the pus cavity below at the same operation.

DR. JANVRIN.—The doctor says he did not attempt to close the fistula. Probably it could have been closed, if he had tried. It is not, under ordinary circumstances, a very difficult thing to close a fistula in the rectum even less than four inches from the anus. I did it once myself in a case which I reported at a meeting of this Society some four years ago. It was a case in which I removed a large cyst of the right ovary and a dermoid cyst of the left ovary. The latter penetrated into the lumen of the rectum about three inches and a half from the anus. After drawing this diverticulum through the anterior wall of the rectum, a rent about an inch and a half in length was left. By reflected light and the use of very fine silk, the rectal opening was easily closed and the patient got well without difficulty. I fully agree with the ideas expressed by Dr. Wylie and by Dr. Polk regarding the treatment of these cases. I would have closed the rectal opening by sutures first, and if that failed I would have treated it as Dr.

Polk has suggested. I should have made an opening into the vagina any way, even had I left the rectal fistula.

DR. POLK.—My remark on filling in below with gauze was based on the supposition that there was already an opening into the vagina.

DR. H. J. BOLDT.—I would mention a case which has occurred recently in my practice, in support of the views expressed by Dr. Wylie and Dr. Polk. A drain was put through the vagina, and the cavity packed with iodoform gauze, as has been suggested here. The patient got along very nicely.

DR. DUDLEY.—The President saw this case, and I would ask him whether pus could be detected readily between the rectum and vagina, below the pyo-salpinx.

THE PRESIDENT.—I was not certain that there was pus between the vagina and rectum. I made a somewhat hasty examination, but was thoroughly convinced that there was a pyo-salpinx and that there was pus below the plane of the broad ligament. But it did not burrow down deep. I should judge. Perhaps at the time that I examined her the pus in the cavity below had been forced out while straining at stool. I was not present at the operation. There is this fact to be considered in the treatment adopted by Dr. Dudley, that he has still a rectal fistula which he does not expect to close, and consequently he has the possibility, if not the probability, of further disagreeable symptoms, perhaps dangerous ones.

DR. JANVRIN remarked that the important thing to do in these cases was to close the opening into the rectum. An opening into the vagina was to be preferred to one into the rectum.

DR. DUDLEY.—In defence of my method of operating, I would like simply to say that I was unable to diagnosticate pus below the vaginal junction before opening the abdomen, because the sac was only a little broader than my finger, and the attachment of the rectum to the pyo-salpinx was in such a position that, had one attempted to puncture through the vaginal junction, he would have gone through the rectum, the gut was so drawn up by adhesions. There was no infiltration of the vaginal vault. As it appeared afterwards, but could not be detected previously, there was a cavity formed by pus which had burrowed through the junction. I closed that cavity over for fear of trouble there. My reason for closing it over was to have a clear peritoneal cavity rather than have any drainage tube communicating with it from below. But before I closed over the cavity I took the precaution to thoroughly curette the walls with a sharp curette. I not only took out the pyogenic membrane, but refreshed the wall. I also curetted the dead tissue on both broad ligaments behind the uterus, even above the vaginal junction. As already stated, I did not close the opening in the rectum, because it was half an inch thick, containing infiltrated tissue, and I should not expect to get union if I put sutures into it. But I curetted it well, until fresh blood ran; then turned the two cavities together and let them fill with fresh blood. In that way, I expect not only to have closure of the opening into the rectum, but to prevent recurrence of the abscess. I believe the thickening now present is blood clot. There has certainly been no escape of gas; there has been no chill, no rise of temperature; the bowels have moved. Union is taking place by first intention, which was my object. If a pus cavity form again, I shall know just where it is, and can drain without

reopening the peritoneal cavity and without puncturing the rectum. In any event I am on the safe side, and, with due respect to the judgment of the gentlemen who have spoken, I think I should repeat the operation under similar circumstances. I think Dr. Polk and Dr. Wylie would have treated this case in the same way, had they seen it, or at any rate would have excluded the pyogenic membrane and infiltrated rectal tissue from the general peritoneal cavity.

EXTRA-UTERINE PREGNANCY—RUPTURE—LAPARATOMY—RECOVERY.

DR. W. GILL WYLIE.—I have a specimen heré from rather an interesting case. I do not like to say too much about it; for, although the patient is now doing well, this being the fifth day and the temperature having been at no time above 101° F., yet it is somewhat early to report that the patient is well. It is really a case of Dr. Jacobus', and I would like him to give the history prior to the operation.

DR. A. M. JACOBUS.—The patient is about 22 years of age, and has been under my care about three years. She has had large, tender ovaries, the right one being, last summer, as large as an English walnut. She has been married seven years; had a miscarriage, at the second month, the first year; has been sterile since. She had also an anteflexed uterus, which I dilated, hoping to get her in a condition to become pregnant. About the middle of last March she sent for me on account of severe pelvic pain which followed an attack of vomiting. She said she had not been unwell since between the 4th and the 12th of December last. In the latter part of December, while walking on the street, she had a very severe attack of pelvic pain which nearly caused her to faint. She had some nausea through January, but did not menstruate. Early in February she began to have a little red flow from the uterus, which continued until near the end of the month. During this time she had occasional nausea; the breasts became slightly enlarged, and she went about, being fairly comfortable.

In the middle of March, when she sent for me, I examined her; found the cervix soft and prolapsed, and a condition which at first appeared like a retroflexed pregnant uterus of the third or fourth month. But on more careful examination I found a large cyst to the right of and posterior to the uterus, and yet the tumor and the uterus were so intimately connected that there was no line of demarcation. She said she suffered from very severe bursting or tearing, intermittent pains, which almost took her breath away at times, and that whenever she had attacks of nausea and vomiting these terrible pains would recur. A number of times when I saw her the pulse was about 95 and the temperature about 99° F.

I suspected that it was a case of extra-uterine fetation, probably abdominal, yet, as just stated, there was something about the case which simulated a retroflexed pregnant uterus; but the more I thought of it the more I became convinced that it was ex-

tra-uterine pregnancy. A bromide and antipyrin mixture was given to relieve the pain and nervousness. Meanwhile, the question whether to use electricity, to watch, or to do a laparotomy was under consideration. Last Wednesday night, about 9 P.M., the patient's husband came for me while I was out, and left a message to call at once, as his wife was in terrible agony (the pain in the pelvis having come on with vomiting), and that she had been unconscious for a few minutes. I returned about 1 A.M., and expected, on going to the patient's house, to find her dead from hemorrhage; but they had given her a dose of morphine, which quieted her, and, the alarming symptoms having passed off, all had gone to bed. Judging by the pulse and general appearance of the patient that she could not have had much hemorrhage, if any, and that no further *immediate* attention was necessary, I left directions to have Dr. W. Gill Wylie see the patient with me the next morning early, and to perform laparotomy if deemed advisable.

DR. WYLIE.—I saw the patient Thursday morning last with Dr. Jacobus. Her pulse was rapid, the temperature not very marked; there were apparently no urgent symptoms. As well as could be made out on examination, the uterus was forward, displaced to the left, and a large mass was in the right of the pelvis, low down and fixed. I took it for granted there was fluid in it, and said it was one of two things—either extra-uterine pregnancy or a cyst with some inflammatory material around it; that the best thing to do was to have the patient enter my Sanitarium, where the abdomen could be opened and whatever was necessary could be done. She was removed that afternoon, and I arranged to operate the next day. She came over without any great difficulty, but the next morning I was much disappointed to find that she had an exceedingly rapid pulse, showed a good deal of pallor, the temperature being about 101° F. in the axilla. Seeing this condition, we prepared for operation at once. She struggled rather violently going under ether. The pulse then was not less than 130 per minute. I opened the abdomen, which was rather tense, and as soon as I entered the peritoneal cavity we noticed fluid serum and large black clots matted in the omentum; throughout the pelvis and up in the abdominal cavity were similar clots, some as large as one's hand. The distention of the abdomen was almost wholly due to the blood clots. There was one striking peculiarity about the blood clots: evidently the bleeding had taken place at intervals, for some of the clots were free, having no exudation upon them, while one or two had large, distinct fibrinous exudation around them, simulating the condition which I have seen in the pelvis many times, and which I had always thought were really cysts of the ovary. I was satisfied some of the blood forming the clots had escaped some hours before the rest, and had time for the formation of a membrane around them like that covering

a cyst. I confidently believe that, in many cases in which we have found cysts, the formation was due to exudation from the peritoneum covering in a foreign substance, and often taking on a round, cyst-like shape.

I had no difficulty in getting the clots out, although they were strongly adherent in places, being entangled in the omentum. After clearing the cavity pretty well, there seemed to be a good deal of hemorrhage, but it was dark (venous). I readily separated everything from the cyst, which was not adherent above, but firmly fixed in the pelvis below. I attempted to enucleate it entire, but, before getting well down, it burst and this baby slipped out into my hands. Then I readily enucleated the whole mass, including the placenta, which was under the broad ligament, the broad ligament being rolled back over it as in pyo-salpinx or ovarian disease. Whether the baby was in the tube, in the ovary, or under the broad ligament, tube and ovary being over it, I cannot say. I passed a needle well down in the broad ligament, close to the uterus—to cut off the blood supply, if possible—tied the suture, but found there was still severe hemorrhage, and the pulse had become imperceptible at the wrist. The patient was gasping, apparently dying. I had ready, as I always do in laparatomies, a vessel containing two gallons of hot water kept at a temperature of 112° F., connected with a fountain syringe to allow the hot water to run into the abdominal cavity at once if called for. I brought out that idea some years ago as a means of reviving patients during operations, and I have never seen its advantages demonstrated better than on this occasion. The patient rallied almost at once on leading the hot water into the abdomen. The tube carrying the water played even up to the diaphragm, and instead of increasing the shock it revived the patient, and I think prevented death on the table. While this was going on, the nurse was instructed to inject into the gut every twenty minutes a strong saline solution of beef tea or beef peptone. I am satisfied that did good; that in such cases it enters the blood almost as soon as it is thrown into the rectum. By these means the patient was kept up until the abdominal cavity was cleared, the placental site searched, a suture passed below the broad ligament which checked the greater part of the hemorrhage, and, although there was still some oozing, the patient's condition was such as not to justify more prolonged search. The abdomen was then washed with more hot water, which further revived the patient. I then took a large piece of gauze, long in shape, pushed it well in against the bleeding surface, and rapidly sewed up the abdominal wound. I did not put a drainage tube in, but caught the end of the pedicle with a pair of strong forceps, and brought the forceps carefully up, so that I had the pedicle suspended in the opening of the wound, surrounded by gauze. Veins put on the stretch in that way will often cease bleeding, but if dropped back they will ooze.

The patient was in a very low state through the night, but rallied, and the next day was in very good condition. She has steadily improved, the temperature being 101° F., the pulse about 100. There has been no abdominal distention: the bowels have moved, and it seems she will recover. She is menstruating to-day. I removed the forceps the next morning, giving plenty of time for blood to clot. The next day I removed the gauze. It gave some pain, but acted beautifully as drainage. A great deal of the water left in the abdominal cavity when the gauze was put in and the abdomen closed oozed out into the dressing.

DR. JACOBUS added that there was no history in this case of the decidua or clots escaping from the uterus.

DR. J. E. JANVRIN said he understood that in this case there had been several attacks of severe pain, and also, as Dr. Jacobus had stated, some sanguineous flow. He thought these attacks of pain were due, as he had often expressed his belief on other occasions, to rupture of small blood vessels in the peritoneum covering the tube which contained the fetus. Dr. Wylie had spoken of different strata of blood, which would be accounted for in this way. He thought Dr. Wylie's remark, that none of the blood clots seemed to be old, did not invalidate this statement. Finally rupture of the tube took place, and the fetus escaped downward beneath the broad ligament. This view of the progress of tubal pregnancy had also been entertained by Dr. Arthur Johnston, of Danbury, Ky., and also by Mr. Tait.

DR. JACOBUS remarked that the fluid contained in the sac was purely amniotic.

DR. WYLIE said the hemorrhage was not into the sac, but apparently into the peritoneum, and came from the placental site. The fluid in the sac was clear. He had not said that the sac had ruptured.

DR. JANVRIN remarked that as a rule, where rupture had gone on to any extent, certainly the amniotic fluid escaped, and the fetus also. He asked whether the hemorrhage in this case came simply from distention and tearing of the posterior surface of the broad ligament, and Dr. Wylie replied that, as nearly as he could tell, that was the fact.

DR. JANVRIN repeated that he thought the case was confirmatory of the views which he had expressed three or four years ago, that with the attacks of colicky pain there were slight hemorrhages on the peritoneal surface of the sac; later on, the sac itself ruptured, and if the fetus was in the tube it escaped directly into the abdominal cavity; but in this case rupture did not take place directly into the peritoneal cavity through that portion of the tube which lay above the ligament, but downward behind the ligament.

DR. JACOBUS expressed the opinion that hemorrhage had not taken place in this case until Wednesday night, two nights previous to the operation.

DR. JANVRIN said that the only difference of opinion between him and Dr. Jacobus was that Dr. Jacobus did not think the attacks of pain from which the woman had suffered were attended with hemorrhage. Dr. Janvrin thought there had been slight hemorrhages, and that they had been quickly absorbed.

DR. JACOBUS did not deny that this was possible.

DR. DUDLEY was reminded by this case of one operated upon last year by a friend. It was a case of tubal pregnancy which had burst some twelve hours before the doctor arrived, and he found the abdomen full of blood. The shock was very severe. He had great difficulty in removing the fetus and the after birth with the tube, yet the patient recovered. In that case the abdomen was washed out, and shock was anticipated by the use of hot water. He regarded this as a wonderful means for restoring the pulse and preventing shock, and he believed it alone saved Dr. Wylie's patient. In the case which he had related this evening, he washed out the abdomen four times with hot water, and each time the pulse showed that under its influence the patient rallied at once.

DR. C. A. VON RAMDOHR.—I would to a certain extent criticise this case. I had the good fortune to have a patient recover recently after rupture of a tubal pregnancy. The attending physician came to me and said that he had a case of extra-uterine pregnancy which had ruptured the day before; that the woman's abdomen was full of blood; that he desired me to come along, and have her removed to the hospital at once and operate. When I arrived I found the woman absolutely blanched, almost pulseless, the hemorrhage still going on. It was impossible to operate at the house of the patient, and I absolutely refused to have a hand in removing her for fear of impending acute anemia. I advised that she be let alone until she had recovered from the shock. She was left four or five days; she recovered to a certain extent, got a better pulse, and was then taken to the hospital. The fetus was a large one. I will show it at a future meeting. There was not a particle of hemorrhage started by the transfer to the hospital. The temperature was then 102° F., and it was time to operate. The abdomen was opened. Many blood clots were removed, differing in color. The fetus lay among the intestines. The tube was so adherent that it was impossible to remove the sac, the whole pouch of Douglas being a part of the sac. The fetus and placenta were removed. The oozing seemed not to completely stop, but, owing to weak heart action and the former loss of blood, the larger hemorrhage had ceased. The sac was sewed into the abdominal wound. The hot-water washing had immediately improved the pulse. The anesthetic was taken badly. A small opening was left in the lower part of the abdominal wound, and iodoform gauze put in. As there was still hemorrhage when I was about to leave, I tamponed the vagina as an expedient for getting counterpressure. The hemorrhage then ceased. The temperature did not rise above 100° F. At present the sac cavity holds at times half an ounce of fluid. It has grown much smaller than it had been. The woman is getting well.

The first point to which I would call attention in this case is that the woman was not removed for operation at once, through fear that she might die on the way. The second is that counterpressure by tampon through the vagina stopped the hemorrhage, which could not be stopped by packing the sac alone through the abdominal wound. Of course it was not safe to make too great pressure within the sac itself.

DR. POLK.—Mr. Tait has called attention to the fact that in these cases the hemorrhage comes mainly from the ovarian artery, or, if not from the ovarian, from the uterine artery; and that if a strong ligature be passed down and tied close to the pelvic wall,

the hemorrhage will cease. I was able to verify that in a case of extra-uterine pregnancy. The ligature immediately controlled the hemorrhage. I understand Dr. Wylie used the clamp simply to hold the pedicle up.

DR. WYLIE.—That is all.

DR. POLK.—There is no objection to placing a clamp on these points, and leaving it on twenty-four hours, provided there is not a slot in which the intestine may become engaged. A good long clamp will answer the purpose perfectly. But I would suggest that in cases of extra-uterine pregnancy Mr. Tait's method will control hemorrhage. It may be accomplished by the use of clamps, even two or three being used if necessary, and thereby shortening the operation.

DR. JACOBUS thought Dr. Wylie, in reporting the operative procedure in this case, had not laid sufficient stress on the severity of the hemorrhage. Blood seemed to be welling up from the whole floor of the pelvis.

DR. POLK asked whether Dr. Wylie had tied close to the uterus, taking in the uterine artery, and again whether he had put a ligature around the outer side of the broad ligament.

DR. WYLIE replied that he had tried to carry out the idea suggested by Dr. Polk, of tying the uterine and ovarian arteries, and still there was hemorrhage. Therefore he packed the cavity with iodoform gauze.

THE PRESIDENT.—It would seem that, as suggested by Dr. Wylie, the hemorrhage had come from the vessels which went to supply the placenta, and which, from once having been small, had increased in size with the development of the fetus.

DR. POLK.—Will the President establish the anatomical connection of the placental circulation?

THE PRESIDENT replied that it might be and would be through any blood vessels wherever the placenta had been attached. These vessels grow so rapidly that a few weeks only are necessary for their development, and when the placenta was torn off, unlike the uterine blood vessels, they will not close quickly.

DR. BUCKMASTER suggested there might be some abnormal distribution of the arteries.

THE PRESIDENT, continuing his remarks, said: This case of Dr. Wylie's is another illustration of the difficulty which often exists in diagnosing extra-uterine pregnancy. In this case the operator was unable to tell whether the pregnancy was tubal, ovarian, or abdominal: nor was he able, notwithstanding great skill and large experience, to tell whether the tube had ruptured. Now, if Dr. Wylie could hardly tell in this condition what to do, what should one expect of the surgeon in the country, who has perhaps never seen an abdomen opened? If he undertake to operate, what can be expected but death? For that reason, I think if the physician in the country sees a case of extra-uterine pregnancy in the first, second, or third month, he is justified in employing electricity to destroy the fetus.

DR. VON RAMDOHR.—A word with regard to tying the uterine artery. On one side, in my case, it was very easily tied. On the other side it would have been extremely difficult. There was left lateral version, and it would have been almost impossible to get the needle through. It would have been necessary in this case to make a cross incision in the abdominal wall or to open the abdomen further, and the bleeding was not sufficient to call for it.

DR. POLK.—Dr. Von Ramdohr says he tied on the side. Does he mean at the side of the uterus or at the side of the pelvis?

DR. VON RAMDOHR.—The side of the uterus.

DR. POLK.—If one tie on the side of the uterus, the hemorrhage will continue; if he tie at the side of the pelvis, it will be cut off. I did not understand Dr. Wylie to say that he tied the broad ligament at the pelvic wall.

Of course in this case there was a possibility of abnormal anastomosis. An extra-uterine pregnancy develops primarily, according to the latest anatomical observations, in the tube; and, if that be true, it must necessarily receive its placental blood supply from the ovarian vessels. If, then, the ovarian vessels be tied on the outside, this must necessarily control hemorrhage from the placental site. But if the placenta can attach itself indiscriminately in the pelvis, of course this statement falls.

DR. JANVRIN asked whether the fetus was dead, and Dr. Jacobus replied that it was not. Dr. Jacobus went on to say that it was not everybody who believed as Mr. Tait did in this matter of the attachment of the placenta. He did not believe that in this case it was in the tube at all; it was attached to the floor of the pelvis, and the broad surface was like a sponge welling up blood; and there were cases on record in which the placenta was attached to the intestine.

DR. POLK remarked that, if he understood the case correctly, the gentlemen did not know where the placenta was attached; they only believed. What was wanted was facts.

DR. WYLIE remarked, with regard to the country physician using electricity, that in his opinion, if he discovered what he believed to be a case of extra-uterine pregnancy, and was not able to operate himself, he should send for the expert at once and have laparotomy performed.

THE PRESIDENT.—It might be some distance from an expert, and the latter when sent for might not be able to go before the next day or later. I do not urge electricity because a laparotomy is not justifiable in good hands, but because it cannot safely be performed by all, while electricity is safe in nearly all hands.

DR. WYLIE.—If he could make a diagnosis early enough to use electricity, he would have time to send for an expert.

THE PRESIDENT.—One never knows how difficult the operation may prove. If it should turn out as difficult as in the case just related by Dr. Wylie, there are but few surgeons who are sufficiently expert to save the patient. Many of us would be unwilling to trust the case of our own wife to the general surgeon, while electricity can postpone the necessity of an operation until the best man is secured; and perhaps it may prevent *all necessity* for a laparotomy.

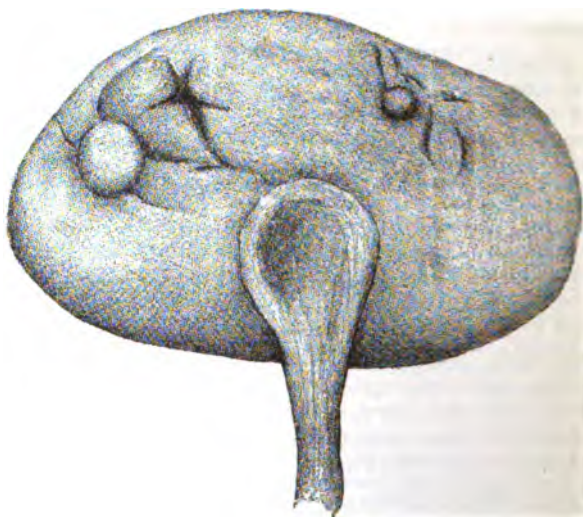
DR. WYLIE.—I think the belly ought to be opened in doubtful cases. It is a very simple procedure, attended with very little risk. If there be an extra-uterine pregnancy, take it out. One may kill the fetus with electricity, but it does not cure the case. Dr. Von Ramdohr criticised me for removing my patient. I did not know that the patient was bleeding; in fact, I did not know that it was a case of extra-uterine pregnancy. I had her removed because her condition warranted it and because she would do better in the hospital. I should have considered myself a very guilty man had I removed her and known at the time that bleeding was taking place. I should have operated at once.

A fact in the case which I wish to emphasize is the great difficulty of diagnosis. This very commonly occurs, and usually where a positive diagnosis is made it proves erroneous. But, in any event, whether it be a case of cyst, of salpingitis, or of extra-uterine pregnancy, the abdomen should be opened. In forty-nine cases out of fifty, if it turn out to be extra-uterine pregnancy, recovery will follow the operation, by whomsoever performed, if the man has had any experience with abdominal surgery. The trouble is, we do not see the cases: they die from just such management as in Dr. Von Ramdohr's case—from being let alone. I believe the condition is more common than physicians had ever dreamed of until they began to open the abdomen and learn something about it.

DR. H. J. GARRIGUES (by special request) made the following report on

SPECIMEN OF HUMAN MONSTROSITY PRESENTED TO THE SOCIETY BY
DR. H. J. BOLDT AT ITS MEETING ON DECEMBER 18TH, 1888.

The specimen has a flattened ovoid shape. After having lain in alcohol, it measures 8 centimetres in length, 7 in width, and



5 in height. A small piece of the umbilical cord is attached to it. This point we will call the top. It is surrounded by a shallow furrow. The whole body is covered with a coarse cutis with epidermis, and a very sparse growth of short, thin, light-colored hairs from 3 to 5 millimetres long. The skin is of a yellowish-gray color, and shows very large pores sitting close together and formed by the intersection of short furrows.

Opposite the insertion of the cord is found an irregular, roundish area, about 2 centimetres in diameter, where the skin is thin, smooth, white, without hair or sulci. It has a tail-shaped con-

tinuation, 2.5 centimetres long and 5 millimetres wide, of the same character, which goes off in a straight line to the right.

On the anterior surface, respectively 5 and 9 millimetres below the umbilicus (above and to the right in the figure), are found two small bodies—one pear-shaped, 15 millimetres by 5; the other globular, 5 millimetres in diameter. They are only parts of the common skin, which are surrounded by a shallow sulcus.

To the right of the umbilical cord (above and to the left in the figure), and in contact with the cord, is found a group of seven prominences. The two largest of these have a lip-like appearance, having a convex outer and a concave inner surface. To the right and behind these is a pedunculated little tumor of a whiter color than the other skin. The four others are only slightly prominent tubercles at the base of the other three. The whole group occupies a circular space 3 centimetres in diameter.

The specimen having been lying in alcohol, it was not possible to inject the vessels. In the cord could be distinguished two large, tortuous vessels, which on entering the body broke up into numerous branches.

An incision is found through the bottom, opposite the insertion of the umbilical cord. This shows that the body has one large, round internal cavity, lined with a thin membrane which can easily be peeled off from the wall (peritoneum). This cavity is said to have contained a serous fluid.

The wall may be divided into two parts of nearly equal size—a thin part, increasing gradually from 1 millimetre at the smooth white bottom to 8 millimetres where it joins the other part; and a thick part measuring 2.5 centimetres. The latter carries the umbilical cord and all the above-mentioned prominences.

The wall is everywhere formed of fibrous tissue, as ascertained microscopically. There is no trace of any organ or other tissue, except numerous vessels and, at the bottom of the space separating the two above-described lip-like protuberances, a small bone. This reminds one of the shape of the third phalanx of a finger. It is 1 centimetre long, 5 millimetres wide, and has a broader base which nearly reaches the central cavity, and a rounded apex pointing toward the surface. It consists of two distinct parts. One is a thin shell of hard, white bone, with the convexity turned backward and to the right (opposite in the engraving). The other is composed of small, irregular, roundish masses like peas. There were three such bodies: one was removed for microscopical examination, the two others remain in place. They lie in the concavity of the white shell. Each of them is again composed of a little bony shell and a round central mass.

Microscopical examination by Dr. Herman M. Biggs has shown that the wall is composed of a rather dense, fibrillated connective tissue. It contains a considerable number of small, well-formed

blood vessels, numerous sweat glands, and hair follicles with well-formed sebaceous glands.

So far as I have been able to find by a research of the works on monstrosities found in the public libraries of this city, it is the first time that a specimen of so low a degree of organization has been found in a woman. Gurlt saw two in cows, and was the first to describe them well.¹

The large treatises on monstrosities by Taruffi² and Ahlfeld³ have not yet reached this kind of monster, which shows the lowest degree of organization known in mammalia and the human race.

Foerster⁴ does not mention any lower type than an amorphus described by Vrolik.⁵ Vrolik describes it under the heading acephalia, and it is much more developed than our specimen. In the interior were found a knuckle of intestine, bodies of vertebræ and other irregular bony masses, muscular layers, a rudimentary spinal marrow with nerves departing from it, and a dura mater. Bland's anide showed likewise a much higher organization, having a small brain, medulla spinalis surrounded by a bony theca and giving off nerves through the foramina of the bone.

The only work in which I have found a body similar to ours described is that of Geoffroy Saint-Hilaire. This author had never seen one himself, and says that in his description of it he chiefly follows Gurlt, and he reproduces the two figures given by the latter of the body unopened and cut open lengthwise.

In order to show the correctness of my diagnosis, I beg to submit a translation of Saint-Hilaire's description:⁶ "This body is an irregularly globulous or ovoid, sometimes pyriform, mass. Gurlt does not say so, but his figures, as well as Ruysch's plate, show that the shape of this mass is more or less lacking in symmetry. The very thick skin is uniformly covered with hair, except at the two ends of the body. At one of them is found the insertion of the umbilical cord, sometimes nearly in the median line, at other times removed to a side. At the other end is seen a nude place surrounded by a shallow furrow. To this nude place correspond interiorly a cartilage and one or several bones, the shape of which is so irregular that it is not possible to establish their analogy. These are the only vestiges of a skeleton, and besides them are

¹ Geoffroy Saint-Hilaire, "*Histoire générale et particulière des anomalies de l'organisation chez l'homme et les animaux*," Paris, 1832-36, p. 532.

² Cesare Taruffi, "*Storia della Teratologia*," in six volumes, of which five have been published, the last in 1889.

³ F. Ahlfeld, "*Die Missbildungen des Menschen*," Leipzig, 1880-82.

⁴ August Foerster, "*Die Missbildungen des Menschen*," Jena, 1861.

⁵ W. Vrolik, "*Tabulæ ad illustrandam Embryogenesin hominis et mammalium, tam naturalem quam abnormem*," Amsterdam, 1849, plate 46, figs. 1, 2, and 3.

⁶ Loc. cit., p. 584.

only found in the interior of the body cellular tissue, a serous fluid, fat, and two vascular trunks—one arterial, the other venous. These trunks, prolongations of the umbilical artery—which is single in these monsters—and the vein of the same name, extend almost in a straight line from the umbilicus to the opposite end of the body, and end there after having given off some lateral branches."

It is evident that this description in all essentials tallies with our specimen, and if we examine the figure taken from Gurlt's work the similarity becomes still more striking. The only differences are: 1st, that in his there was a large central artery and vein extending from the umbilical cord to the opposite end of the monster and sending out side branches, while in ours numerous smaller branches go off near the insertion of the umbilical cord and spread all through the walls of the body; 2d, that the bony mass in Gurlt's case is found at the opposite end of the body, in ours near the insertion of the umbilical cord; and 3d, that our specimen shows a distinct serous lining membrane, which is not mentioned in Geoffroy Saint-Hilaire's description, but which may have been present and overlooked or not mentioned.

Geoffroy Saint-Hilaire does not mention the protuberances found on the skin. Still, they are found on nearly all these globular specimens in a smaller or larger number, and can therefore hardly be accidental. On the above-mentioned monster of Vrolik there were four; on Gurlt's figure we see one, corresponding to the bony mass inside; in Bland's figure one; in Panum's specimen, represented in his figure 9, there appear three.

On our specimen these protuberances are in all nine in number, but they differ much from each other. The two on the front (to the right in the engraving) have a distinct sulcus at their base, but do not protrude beyond the level of the skin. Of the other group, I would leave the four outer ones out of consideration as merely slight thickenings of the skin without any significance. The two largest (to the left in the engraving), which I have designated as lip-like, and which correspond symmetrically to one another, I am inclined to look upon as the two halves of one whole which likewise is surrounded by a furrow. The remaining protuberance (to the left and below the others in the engraving) has so deep a furrow that it becomes pedunculated. This last one does not contain anything but the same mass of which the whole body is made up. At the bottom of the space intervening between the two former we find a bone, just as in Gurlt's specimen.

In my opinion these four protuberances, as well as similar ones on other specimens, are rudimentary extremities. This view is

¹ Philosophical Transactions, 1781, vol. lxxi., p. 363, with table p. 370.

² P. L. Panum, "Bidrag til Kundskab om Misfostrenes physiologiske Betydning," Copenhagen, 1877, p. 15 and table i., fig. 9.

corroborated by a specimen of Panum's¹ which had a higher organization, but where there is a protuberance forming the stem of the pear-shaped body, and containing bones which that learned physiologist interprets as the three phalanges of a finger.

It must likewise be more than accidental that several of these globular monsters—even Ruysch's, which came from a cow and was covered with long hair all over the rest of the body—have a nude place opposite the insertion of the umbilical cord. In our specimen this place is at the same time the thinnest part of the whole body, composed of only a very thin layer of skin and the lining membrane. I wonder if this is not an unsuccessful attempt at the formation of an anus?

All cases have, like ours, been found in twin pregnancies. The only one in regard to which we have no information on this point is Ruysch's.² According to Hempel and Claudius,³ the twin pregnancy is a physiological necessity in acardiaci, i.e., monsters without a heart, that continue to grow and develop themselves until birth takes place. There must be such a connection between the circulatory system of the well-developed fetus and the acardiacus that the heart of the former can furnish the circulation and nutrition for both.

Neither Ruysch nor Bland ventured to give a name to their specimens. Gurlt in 1832 called his *Amorphus globulus*, but changed it in 1877 to *Acephalus globosus*.⁴ Geoffroy Saint-Hilaire gave these globular monsters the generic name *Anideus* (from a privative and *ειδος*, shape—i.e., the shapeless), without adding any specific name. In Geoffroy Saint-Hilaire's⁵ system they belong to class 1, single monsters; 2d order, omphalosites (i.e., which can only live in connection with the mother to whom they are attached by an umbilical cord); 2d tribe, of which they form the unique family: the first tribe comprises the two families paracephalous (i.e., almost headless) and acephalous (i.e., headless) monsters, which yet show the chief regions of the body and more or less developed extremities.

Tiedemann and the two Vroliks have divided all acephali into nine classes or types, of which Gurlt's *Amorphus globulus* forms the lowest.

¹ Panum, loc. cit., pp. 11 to 14 and table i., figs. 5 to 8.

² Opera, vol. iii., Amsterdam, 1744, "Thesaurus anatomicus sextus," p. 34 and table vi.

³ C. F. Hempel, "De monstribus acephalis," Copenhagen, 1850. M. Claudius, "Die Entwicklung der herzlosen Missgeburten," Kiel, 1859. Quoted by Panum, loc. cit., p. 7.

⁴ Gurlt, "Lehrbuch der Anatomie der Haus-Säugethier," Berlin, 1832, quoted by Saint-Hilaire, loc. cit., p. 531, and Wood's "Reference Handbook of the Medical Sciences," vol. vii., p. 9. "Ueber thierische Missbildungen." Berlin, 1877, quoted by Panum, loc. cit., p. 10.

⁵ Loc. cit., p. 205.

All acephalous monsters are the result of an arrest of development at any period before the fourth week of pregnancy, the time when the head is formed.

To the remarks offered when the specimen was presented to the Society may be added that the monstrosity was expelled fifteen minutes after the child was born, and that the cord of the monstrosity was about fifteen inches long and much thinner than normal.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

(Abstract.)

Thursday, October 3d, 1889.

The President, DR. THEOPHILUS PARVIN, in the Chair.

DR. E. P. BERNARDY read the history of a case of

SUPPURATING POST-PUERPERAL HEMATOCELE,

the patient recovering after the performance of laparotomy.

DR. J. PRICE.—I saw this patient with Dr. Bernardy and Dr. Cohen; and to have a purely medical man urge the importance of abdominal section in a post-puerperal case is very encouraging. There was a considerable quantity of broken-down blood, which was washed out with difficulty. If the case had not been a post-puerperal one, the history would have been that of an extra-uterine fetation. This case demonstrates most forcibly the fallacy of claims made in regard to refinements in diagnosis, and shows the folly of claiming a positive diagnosis.

DR. H. H. KYNETT reported an interesting case of

ABDOMINAL SECTION—REMOVAL OF BOTH APPENDAGES FOR DOUBLE PYO-SALPINX AND DOUBLE OVARIAN ABSCESSSES—RELEASE OF ADHESIONS, IRRIGATION, AND DRAINAGE.

When the peritoneal cavity was opened, there was a free discharge of muddy, blood-stained fluid, indicating a marked peritonitis. Investigation showed this fluid was contained in a sac formed by inflammatory processes, shutting off the pelvic portion from the general peritoneal cavity. The adhesions, however, were friable and easily broken. Contained in this pelvic abscess cavity were four distinct pus sacs, viz., two huge pus tubes and two ovarian abscesses, the larger the size of an orange.

The removal of these sacs was not difficult; the patient recovered promptly, and is now in better health and spirits than since marriage.

Points worthy of notice in this case are :

1st. Four distinct abscess cavities within a fifth. Query, what

would have been the result of Martin's treatment of pelvic abscess by vaginal drainage? 2d. In spite of careful manipulation, both ovarian abscesses were ruptured in removal, and the walls of the containing sac were very easily broken up. Query, what might electricity, properly applied, have accomplished? 3d. When first seen, the patient did not complain of symptoms of acute trouble at all commensurate with the condition revealed. 4th. Menstruation has occurred regularly since the operation, bleeding being profuse and lasting three days. 5th. Both patient and her husband gave unquestionable histories of gonorrhea.

The second case was operated on to produce premature menopause for a rapidly growing fibroid uterus.

ABDOMINAL SECTION—REMOVAL OF BOTH APPENDAGES FOR DOUBLE HYDRO-SALPINX AND LEFT OVARIAN CYST.

There was also a small cyst in the right ovary. The adhesions were universal and exceedingly tough, making the removal difficult. The uterus was large and hard; irrigation and drainage.

Patient made an uninterrupted recovery, and is now sitting up. This case is particularly interesting, as before operation it seemed a fit case for electricity. The uterus being high in the pelvis and large, the condition of the appendages was not easily discoverable. Irrigation and drainage were used, for fear of hemorrhage from the separated adhesions.

The third case,

A MILK CYST,

is interesting on account of the comparative rarity of the tumor.

It was removed September 8th, 1889, from the breast of Mrs. P., white, age 32, married six years, two children. When the patient began to menstruate, at the age of 16 years, she first noticed a small lump in the left breast on a level with the nipple. It occasioned no trouble. It remained quiescent during her first gestation and nursing—in fact, until three months after her second child was born, when it began to enlarge. She never had any difficulty in nursing, but remarked that after the tumor began to grow she had less milk in the left breast. At this time, also, the tumor pained her for a few days and led her to fear an abscess. The pain subsided, but the enlargement continued. She was afraid of cancer, and desired the tumor removed.

When seen, the tumor was somewhat larger than it now is. The skin was normal in appearance and freely movable over the mass. The superficial veins were enlarged. The nipple was not affected, and the growth appeared outside the areola. It was firmly adherent in the glandular structure of the breast, and required dissection by the knife. Its contents had the greasy, sticky, cheesy appearance of a dermoid cyst. There were no other points of thickening or hardness discovered in the breast.

I believe it to be a solid milk cyst. Microscopic examination has not yet been made.

REMOVAL OF A LARGE OVARIAN CYST, FOLLOWED BY RUPTURE OF
THE RIGHT COMMON ILIAC VEIN.

DR. W. L. TAYLOR.—The patient of whose condition I beg to present the following history was sent to me by Dr. D. L. Hetrick, of Bedford County, after he had diagnosed the existence of an ovarian cyst.

Miss L. M., æt. 24, single, tall, very much emaciated; abdomen enormously distended; puberty at 19; menses regular for three years, until July, 1887. Two weeks before her menstrual period, whilst in the harvest field, after drinking a large quantity of cold water, had a severe chill. Menses failed to appear in July and August. In September, 1887, the menstrual flow appeared, but there was no discharge again until March, 1888, when there was a slight flow for three or four periods, disappearing then until after the operation. In November, 1887, had an attack of malarial fever, but never was well after the chill in July. After this attack of malaria, a lump appeared in right side of abdomen, which never caused any pain, but only a sense of discomfort from pressure, and which increased rapidly in size.

Upon examination, the abdomen gave evidence of the presence of a very large encysted fluid, ovarian in character. On July 7th I operated with the assistance of Drs. W. A. Carey and E. R. Kirby, and removed a non-adherent cyst of the right ovary. The fluid of the cyst was syrupy and very heavy, weighing fully fifty pounds. The pedicle was unusually thick, and was tied in sections, and finally with a Tait ligature. The steps of the operation were devoid of special interest, and but little cyst fluid or blood escaped into the abdominal cavity. This was thoroughly washed out, and I remarked the absence of bleeding points, and proceeded to protect the intestines preparatory to the insertion of my parietal stitches. Noticing a slight oozing of blood from the region of the pedicle, I investigated, and found that a couple of veins, which were greatly distended, had ruptured just beneath my ligatures. These I tied securely, and removed cloths. Whilst doing this, I noticed higher up—fully as high as the sacro iliac juncture, and to the right side—what appeared like an adherent intestine, rapidly distending, with a central portion most distended. This rapidly thinned out, and gave every appearance of speedy rupture. Touching it gently with my finger, it burst instantly, and there was a frightful gush of blood. I quickly grasped with my fingers the bleeding vein, for such it proved to be, and once more it broke down. I then caught it with a large Péan forceps, which imperfectly controlled the hemorrhage, and, guiding with my left index finger a large curved needle, I separated the vein from its artery and carried ligatures securely around it. These immediately stopped all hemorrhage, but caused a very decided and alarming venous swelling on either

side of my ligatures. I removed the large quantity of blood carefully with my hands, and, fearing to even irrigate, closed up after introducing a drainage tube. At the close of the operation, which was lengthened by the hemorrhage from three-quarters of an hour to nearly two hours, the patient's pulse was 160°, temperature subnormal, and respirations about 40. Everything certainly pointed to a positive recurrence of hemorrhage, and she was most carefully watched.

Convalescence, however, was rapid and uninterrupted, and patient returned home in about four weeks. The size of the vein from which the greatest hemorrhage occurred was, without doubt, much increased at the point of hemorrhage. This dilatation fitted in a sulcus in the cyst wall, and needed only the removal of its support—the cyst wall—and the sudden reflux of blood to cause its over-distention and rupture. Its location and relation to the artery, and its size, proved it to be the right common iliac. The possibility of such a varicose condition of either of the iliac veins should deter us from emptying a large cyst too quickly, or from turning it out whilst but partially emptied. A smaller canula and complete removal of fluid before the sac is drawn out would be much safer, and render less likely an accident which, though infrequent, is yet possible. Here and there, filling up the sulci in the tumor wall, or the interstices between lobules, these large veins are apt to distend, and the greater the pressure on either side the greater will be this distention and thinning of the coats of the vein to the extent of the space. As long as the return of blood is hindered by the pressure of the tumor, and as long as this thin-walled venous sac has the support of the tumor wall, there is but little risk of rupture from over-distention. But remove this support suddenly, remove at the same time this interference with circulation, and we have, as in my case, a hemorrhage almost uncontrollable. It is almost impossible to conceive of ligation of such a large and important vein without some interference with circulation, at least some edema. But collateral circulation is plentiful between the two sides, and in my case all the veins were so enormously distended below the tumor that a compensatory circulation was soon established.

Three months after operation, patient is rapidly gaining flesh and is well.

DR. WILLIAM GOODELL.—This seems to be a unique case. I have never met with anything of the kind. The theory of a varicose condition of the veins is a plausible one. I have never seen anything like it in simple unadherent cysts. In intraligamentary cysts I have often torn deep-seated veins, and have had difficulty in checking the hemorrhage.

DR. DRYSDALE.—Accidents of this kind must be very rare. I have never met with anything of the kind. I imagine that it could only happen where the walls of the vein are diseased, or torn during the operation.

DR. E. W. CUSHING, Boston.—I have no knowledge of any case of rupture of a vein during operation, except from injury. I do not see how the removal of pressure could cause rupture in one place, where all of the veins are varicose, although I have known this to cause syncope.

DR. J. PRICE.—I think that there is great danger of wounding the vein by the use of the Baker Brown or Peaslee needle. I think that there is one case on record in which the operator stuffed towels into the abdomen, and put the patient in bed to die, without any attempt to secure the offending vessel. These accidents have occurred from traumatism, from manipulation and wounds made by the use of instruments.

DR. WILLIAM L. TAYLOR.—The hemorrhage occurred so long after any traumatism could have happened, and was so much higher than the pedicle, that I think it cannot be attributed to traumatism. The hemorrhage was spontaneous. It did not occur gradually, but there was a sudden gush of blood following the touch of my finger.

DR. THEOPHILUS PARVIN reported

A CASE OF TUBAL PREGNANCY, WITH SPECIMEN.

Probable diagnosis, and removal prior to rupture. Diagnosis was confirmed by operation. Recovery.

DR. J. M. BALDY reported

A CASE OF TUBAL PREGNANCY, WITH SPECIMEN.

Non-diagnosis, but removal prior to rupture. Recovery.

He emphasized the following points, viz.:

The case is one of primary or unruptured tubal pregnancy. (There are now four such cases on record from this city alone, viz., Dr. J. Price's, Dr. Goodell's, Dr. Parvin's, and my own.)

The patient is a colored woman, which is rather rare.

The patient did not have a long period of sterility, but was bearing children regularly.

There was at no time a sign of a decidual discharge.

There was at no time the slightest subjective or objective sign of pregnancy.

DR. E. W. CUSHING, Boston.—The subject of extra-uterine pregnancy is one of great interest to me, and I can say, from sad experience, that it is not easy to make a diagnosis. After some obscure symptoms of irregularity of menstruation, etc., a near relative was taken suddenly with a severe attack which, after the event, I felt was due to a tubal pregnancy ruptured into the broad ligament; she finally recovered without operation. This turned my attention to the subject, and I looked up the specimens in the Harvard Medical School, which Dr. Parker photographed and I published. In another case, of which I saw the specimen, a gentleman operated for an ill-defined tumor. The cyst was opened after the operation, and a fetus three-fourths of an inch in length found. There had not been a suspicion of pregnancy.

I believe that almost every one agrees in regard to the difficulties of diagnosis, and I believe that pretty much every one here agrees as to the necessity for surgical treatment; yet, as a subject

for debate here, I would suggest in opening this discussion that there may be cases where a man may suspect extra-uterine pregnancy, but yet be not sufficiently certain to operate, or not be able to get permission to do so, or he may be unable to do an abdominal operation himself or secure the services of one who can. I would suggest that under such circumstances the use of the faradic current is not only justifiable but prudent. This would be proper only in the earliest stages, before the fetus has reached such development that it would leave behind a source of irritation and suppuration. I think that the condemnation of the electric treatment in the early stage has been too sweeping and severe. Certainly the horrible cases which are recorded from attempting to puncture the fetal sac, especially at a later date, are not likely to be repeated.

DR. WILLIAM GOODELL.—In regard to the electrical treatment of extra-uterine fetation, I must confess that I was theoretically inclined to believe in it. But when I had met with cases of extra-uterine fetation, and I saw the mass that was present and the adhesions and injuries which adjacent organs had sustained, I could no longer uphold it. In my opinion electricity should be reserved for those cases in which the woman absolutely refuses any surgical operation, or where the physician is not a laparotomist and he cannot secure the services of one. The amount of adhesions is, however, so great, and the injury done the appendage so severe, that the woman cannot in any case conceive on that side. This was apparent in the case reported by me to the Society in which I operated previous to the rupture. In this case, indeed, the appendages of the unimplicated side were so diseased as to need removal. The operation is therefore warranted, if for no other reason, simply for the diseased tubes and ovaries. I have practically been converted to the belief that electricity, and particularly electrolysis, should not be used in these cases. The electrolytic action is a most dangerous one. Although advocated by Apostoli, the results have been most disastrous in the cases in which it has been tried.

I have had four cases of early extra-uterine pregnancy within a few months, in all of which laparotomy was successful.

In regard to early diagnosis, I should say that the most common symptom is arrest of menstruation for one or two periods, followed by irregular uterine hemorrhages. It is true that pelvic colic is a common symptom, but not so common as the other. But I do not know that it is necessary to make an absolute diagnosis; given a woman with the exacting symptoms of a suspected extra-uterine fetation, who has a displacing tumor on one side of the womb, are we warranted in operating merely to remove the tumor, whatever its nature? Do we not constantly, on less provocation, remove pelvic tumors whose character is determined only by the operation? Instead of an extra-uterine fetation, we may find pyo-salpinx or an ovarian abscess; but were we not in duty bound to perform the operation, even at the risk of an error in diagnosis?

DR. BARTON C. HIRST.—I was some time ago called to a case in consultation which presented a clear history of extra-uterine fetation: cessation of two periods, hemorrhage with the discharge of deciduous membrane, a distinct tumor to one side of the uterus, and the subjective signs of pregnancy, with swelling of the breasts and vomiting. Dr. Hamill and myself urged opera-

tion, but, the family being dissatisfied, we were discharged. Another physician was called, and Dr. Parish was consulted. He recommended the use of electricity, and a current was applied, with relief of the symptoms and, I believe, complete cure of the patient. There may be a varicose vein in the broad ligament, which having burst may present all the signs of extra-uterine fetation after rupture of the sac. I have had two such cases; in one case I opened the abdomen and found a blood tumor in the layers of the broad ligament and considerable blood in the peritoneal cavity. From the history and physical signs, I am quite sure that this was not an extra-uterine pregnancy.

I saw, in consultation, a fatal case of this kind after labor not long ago. The labor was a difficult one and ended by craniotomy. There was rupture of a vein in the broad ligament. The bleeding was first between the layers of the broad ligament. This then ruptured into the peritoneal cavity, and the woman died. There was no rent in the uterine wall. Such cases might be mistaken for extra-uterine fetation.

DR. M. PRICE.—In most of these cases, all that we can make out is that there is something which should be removed; but as to a distinct diagnosis of extra-uterine pregnancy being made, I do not believe that it is done one time in ten. It does not interest us a particle whether the cases were diagnosed or not. There is trouble present of such a serious character that it does not become us to lose a single moment. Most of these cases come into the coroner's and not the surgeon's hands. Delay in operating is adding ten per cent to our mortality. It is our duty to operate on the first indication, and if we are mistaken, to thank God for the absence of so serious a condition.

DR. JOSEPH HOFFMAN.—I have twice operated for extra-uterine pregnancy and did not find it. I operated once for something else and found extra-uterine pregnancy. The trouble is that these men who claim positive diagnosis do it from a single case, which, though by no means certain at the time of operation, resolves itself into an absolute diagnosis when they come to publish it. It is the dream and the nightmare of desire to publish something startling which make the diagnosis.

When we feel that rupture has occurred, electricity is a dangerous thing to tamper with. The principal danger is in delay. The longer the growth is allowed to continue, the greater the danger from adhesions, rupture, and complications which cannot be foreseen.

DR. J. PRICE.—There are some interesting facts in connection with the history of this subject. It is curious that a few years ago a man with an experience of one doubtful case should discuss the subject before the American Gynecological Society. It is also curious that the same man, with a single experience with a woman sterile five years, having pelvic pain, irregular menstruation, a delayed period for six days, and recurring attacks of pain, should claim to have killed the fetus of an extra-uterine pregnancy by the use of electricity in ten *séances*, of half an hour's duration each, on consecutive days. Then follows another man with a history of one case, and another in consultation. The man with an experience of one case uses electricity, and the case passes into the hands of another, who writes to the first that he is going to operate. The first physician at once writes not to do it, as he has killed the fetus, while the operator already holds in his hands a large hydro-salpinx.

DR. NOBLE.—Monday, a week ago, I removed an extra-uterine pregnancy which was rather unusual in the conditions present.

The patient was seen by Dr. Kelly, and we agreed that it was almost certainly an extra-uterine pregnancy. At the operation I found the ovum was attached not far from the uterus. Hemorrhage had taken place in the tube, and the clots had been forced out through the fimbriated extremity. On the other side there was a hydro-salpinx. She has done well since the operation.

DR. B. F. BAER.—I wish to go on record as one who believes that it is as easy to diagnose extra-uterine pregnancy as to diagnose any other condition within the abdomen (as hydro-salpinx or pyo-salpinx) positively. But the man who says he can make such a diagnosis positively is an unsafe man.

DR. J. M. BALDY.—It is noteworthy that the men who claim the most on this subject have had the least experience.

TRANSACTIONS OF THE OBSTETRICAL AND GYNECOLOGICAL SOCIETY OF WASHINGTON.

Stated Meeting, May 3d, 1889.

DR. W. W. JOHNSTON, *Vice-President, in the Chair.*

DR. GEORGE N. ACKER read the paper of the evening,

A CASE OF PROLONGED GESTATION.¹

DR. H. L. E. JOHNSON, in opening the discussion, said: The most important question is that of diagnosis. We should determine whether impregnation took place at the time given by the woman. This, of course, is not always possible, for there are so many conditions which would cause a cessation of the menses, and even sterility—as displacements of the uterus—that it is difficult to state with certainty when pregnancy began. In the case reported, however, there was a single coitus, so there can be no mistake. He, however, did not intend to cast any reflection in doubting such cases in general, although they do occur rarely. The principal symptoms of the beginning of pregnancy, morning sickness and nausea, may be feigned or mistakes. If the case progresses and everything appears normal, the question is, Has gestation lasted 305 or 280 days? It would seem as if the condition of the hair, nails, and cranial bones would show that the child had advanced beyond the development usually found at birth when gestation is not prolonged.

Duncan found that in 46 cases in which connection took place only once the average time of parturition was 275 days. Ahlfeld, in 425 cases, obtained an average of 271 days; Hecker, in 108 cases, an average of 273.52 days; Veit, in 43 cases, an average of 276.43 days.

¹ See original article, page 1276.

In the individual cases, two are reported as following a single coitus 329 and 330 days, respectively.

In Ahlfeld's table there existed between the longest and shortest gestations a difference of 99 days; in Hecker's, 63; and in Veit's, 36.

Ahlfeld's tables show that the bulk of confinements vary within narrow limits. Of 653 women, in 15.93 per cent delivery occurred in the thirty-eighth week; in 27.56 per cent, in the thirty-ninth week; in 26.19 per cent, in the fortieth week; and in 10.01 per cent, in the forty-first week. More than half the cases occurred in the thirty-ninth and fortieth weeks, and 80 per cent between the thirty-eighth and forty-first weeks. Of the remainder, 14 per cent took place prior to the thirty-eighth week from accidental causes. Of the 6 per cent reported as occurring later than the forty-first week, a considerable number are of questionable authenticity. Lusk says that gestation protracted beyond the 285th day is certainly of very rare occurrence.

Dr. BUSEY would be sorry to think that all cases of protracted gestation were illegitimate. He had seen some cases in which he was sure the children were legitimate. He had attended the wife of a naval surgeon who had only been with her husband one day and then had not seen him for six months; her child was born 297 days afterwards, and he was sure it was legitimate. He had seen within a year a case where the husband was a remarkably intelligent man, whose wife was approaching the period when it would be impossible to hope for children; both were anxious to have a child, and posted themselves; they had fixed the date of labor for December 27th, 1888, but the child was born January 13th, 1889, 17 days over the calculated time.

Dr. Acker's statement that he had definitely fixed the date of impregnation was a mistake; he had only fixed the date of a single coitus. It may have been several, perhaps ten or more, days after this coitus before impregnation took place. It has been suggested also that we do not know whether the impregnated ovule is the one which escapes at the last menstruation, or the one which should escape at the succeeding period.¹

In so far as our data enable us to determine the date of impregnation, it may be stated that 35 per cent of pregnancies begin the day after the termination of the menstrual period, 85 per cent within the first ten days of the intermenstrual period, and 15 per cent at varying dates of the interval. My custom is to count 280 days from the date of cessation of the last menstruation. When the data are correct, the labor, with rare exceptions, takes place between 274 and 280 days; most frequently it has been nearest 274 days. In cases of prolonged gestation, there must be something peculiar to either the fetus or mother.

¹ At the next meeting of the Society, Dr. Busey, with permission of the Society, stated that the criticism of Dr. King had convinced him that he had either overstated or misstated this suggestion. He had succeeded during the interval in finding the following reference to the subject on page 201 of Parvin's "Science and Art of Obstetrics": "We do not know whether the ovule that is fecundated is the one liberated at the menstrual period immediately preceding the sexual intercourse, or the one corresponding to the succeeding menstrual suppression, or one escaping from its ovisac in the menstrual interval." After a more careful examination of this reference, he was unable to determine whether the author means to assert that the ovule is fecundated before or after its escape from the ovisac.

The conclusion is inevitable that there are certain unknown quantities which prevent the exact determination of the duration of gestation, but they do establish the fact of prolonged gestation, of which Dr. Acker's case is one of the most remarkable.

DR. FRY.—Some obstetric authorities refuse to recognize the occurrence of prolonged gestation, while others accept the opinion that it occasionally happens. The chief interest attached to the question is its medico-legal aspect. Juries have repeatedly decided the legitimacy of children born more than three hundred days after intercourse of the parents.

In animals, as the cow and mare, for instance, where the date of coition is ascertained, it frequently happens that the calf or colt is born much later than the average period for the termination of utero-gestation in these animals. This being an accepted fact, why may not the same take place in the human species?

The case reported by Dr. Acker appears to be one of prolonged utero-gestation, although it may not be for so long a period as 305 days. Impregnation may be delayed for fifteen days after fruitful coition. Under such circumstances, it would reduce the period to 290 days.

It frequently occurs that women exceed the calculated time of their expected labor two or three weeks, and this is due either to an error of reckoning or to pregnancy having commenced just previous to the time of the first menstrual period missed.

In the cases reported of prolonged pregnancy, it is generally noted that the infants are usually well developed and above the average weight. Smellie, nearly one hundred and fifty years ago, reported, under his forceps cases, the fact that he had delivered a woman who went several weeks beyond her proper time, and said the infant was the largest he had ever delivered.

During the fall of 1888, Dr. Fry had delivered a woman who was three weeks later than her proper period. He used forceps, and after the birth of the head had great difficulty in extracting the body. This patient had had four or five children before, and all without assistance or delay.

The question under discussion was particularly interesting to Dr. Fry, as he has at present a case under observation which is one of well pronounced prolongation of utero-gestation. A brief report of the case is as follows:

Mrs. S., a young married lady, was delivered of her first child five years ago. Soon after this, her menses reappeared and recurred regularly every twenty-eight days until June, 1888. (On the 19th of June her natural catamenial period appeared and lasted five days. On the 17th of July it failed to come, and she has not seen any flow except a very slight bloody discharge on the 27th and 28th of July. About the middle of August she commenced to suffer severely from nausea and vomiting.

September 14th she called at my office, and on examination I found the uterus enlarged, and judging from its size, etc., said she was pregnant about ten weeks.

November 1st she felt unmistakable motion, which has continued to date (over six calendar months).

It is now the 3d of May, 1889, and this lady has not been confined. According to the usual method of calculation, counting back three months and adding seven days to date of last menstruation, her proper time for delivery was March 26th. Counting from the termination of menstruation, June 24th, her proper time

for labor would be, by calendar months, March 24th; by lunar months, March 31st. Quickening was felt November 1st, and, granting that she experienced it so soon as the end of the fourth month, her full time would arrive April 1st.

On the 14th of September, when I first saw her, I considered her about ten weeks pregnant. Calculating from this date to November 1st, when she first perceived motion, it would be the end of the seventeenth week; and the end of the fortieth week, the latest date to look for labor, would fall on April 10th.

Looking back over the history for any source of error, we can only find the slight discharge of blood on July 27th and 28th. This followed excessive fatigue from housework—most likely with an object in view—and was ten days later than the menstrual flow should have occurred. The objections against believing this a menstrual period are that she had already considered herself pregnant, and that it was only thirteen weeks from this date until decided fetal movements were felt. Inasmuch as this patient has always been regular in her flow every twenty eight days, impregnation must have occurred some time between June 24th, date when last menstruation ceased, and July 17th, date when the next period should have occurred.

Schmitt reckons from the middle of the interval between the last menstruation and the time when the menses should reappear, and adds 270 days. According to this method, the date would be March 29th. The latest possible period at which we can reasonably suppose conception took place is July 16th—the day immediately preceding the one on which the menses should have come. From this date, April 23d is the full period of gestation.

In this case, according to the different methods of reckoning, the earliest and latest dates to expect confinement are March 24th and April 23d, respectively.

This lady sent for me to-day to ask if I could give any encouragement to hope that gestation would ever terminate, as she is confident that she has been carrying a child ten months already.

I examined the patient and found the head and lower segment of uterus filling the pelvic cavity and resting upon the perineum; os dilated as big as a ten-cent piece. The fetal outline was very perceptible by abdominal palpation, and I think the large size of the lady is due to a large fetus, as there does not seem to be any great quantity of amniotic fluid present.

To take up for discussion the determining causes of labor would extend the debate unduly, but I do not think Dr. Acker should refer to the subject without mentioning two of the theories at least. They were: 1st. The fatty degeneration of the decidua membranes which isolated the fetal organism from the maternal; the former, acting as a foreign body, excited the uterus to contract. 2d. The relative rapidity of growth of fetus and uterus. During the earlier period of gestation, the muscular growth of the uterus was greater than the fetal development; later the proportional growth of the two was reversed. At first the fetus had plenty of room and floated in the amnion, but as it increased in size the accommodations diminished, and finally the uterus was excited to contraction by the distentions of the rapidly developing contents.

DR. H. L. E. JOHNSON.—Dr. Fry's remarks were very ingenuous: that he allowed the impregnated ovum to perambulate around fifteen days before it got into the uterus, and then had to allow the

woman ten days' longer time; and that this theory was incorrect, and not in keeping with the facts of the case, as the quickening was reported to be on time. The prolongation must, of course, be counted after the date of quickening. There was evidently deception on the part of the woman as to the time of quickening. He now had a case which at the longest calculation was due April 19th, and which had not yet come off. In this case, of course, coition was not interrupted.

DR. BROMWELL.—It is unfair to question the chastity in cases of prolonged gestation. We have no possible data from which to calculate the duration of gestation with certainty; nor can we determine the day or hour of impregnation. I think Dr. Acker's case was one of delayed conception and not prolonged gestation. Conception is the fastening of the fructified ovum upon the living tissues in the uterus. Fecundation is when the sperm cell enters the germ cell. I am satisfied that this case was either delayed fecundation or delayed impregnation.

DR. FRY.—How long could the ovum remain without impregnation—fifteen days?

DR. BROMWELL.—It may remain for three or four weeks without fastening itself to the tissues of the woman.

DR. W. W. JOHNSTON.—One proof that the fecundated ovum could remain so long is that the spermatozoa may live fifteen days after being deposited in the uterus.

DR. BROMWELL.—The ovum may become fecundated during the intermenstrual period, and then be washed down by the flow at the next period.

DR. A. F. A. KING thought Dr. Busey was laboring under some misapprehension when he stated that the fructified—i.e., impregnated—ovule may remain as long as a month before getting into the uterus. After a month's evolution the fetus is a line or more in length, and the entire ovum much larger, while the small end of the Fallopian tube was no bigger than a bristle: the ovum of a month's growth could not, therefore, enter the uterus. That the ovum, after impregnation, began its development before entering the uterus, was evident in cases of extra-uterine pregnancy.

In dating the beginning of a pregnancy from a stated coitus, it should be remembered that the spermatozooids may remain in the uterus and retain their impregnating power (at least their motile activity) for a number of days, even a week or more, after coition: so that the union of the sperm and germ cells may not have occurred until some time after coitus, and then only did the pregnancy begin. Spermatic fluid could be kept in a bottle, at the temperature of the body, for several days, and without the spermatozooids losing their activity. The spermatozoa of a frog could be repeatedly frozen without losing their power.

The ovule may remain subject to impregnation several days after menstruation, or after its discharge from the ovary, so that there were a number of circumstances which rendered the date of insemination uncertain.

There was one condition indicating prolonged pregnancy which he had observed, but which had not been mentioned in Dr. Acker's case, viz., an unusually large quantity of the vernix caseosa.

Since his recent study of the "posture" question during labor, he had become inclined to think that one of the factors in determining the beginning of labor was probably displacement of the

head from its place of rest on the iliac fossa into the pelvic brim and thus into the sphincter of the cervix uteri—this especially in multiparæ, for in primiparæ the head descends even before full term. In Dr. Fry's case, however, we had the remarkable phenomenon of the child's head pressing upon the *perineum*, with a partially dilated os uteri, and this for several days, without any symptom of labor. This case is extremely exceptional.

Dr. King related the case of a primipara in whom he had recognized a transverse position of the child during the last four or five months of pregnancy, by external examination. It was unmistakable even a few hours before any symptom of labor occurred. While the patient was sitting at table, labor pains began, and though it was only four hours since he had examined her before, and only less than one hour since pains occurred, the presentation was already spontaneously corrected and the head occupied the pelvic brim.

In this case it may well be asked whether the displacement of the head from the iliac fossa was the cause of labor pains, or whether pains preceded and caused the displacement. He thought the former supposition was quite as probable as the latter.

Even *during* labor, in uncorrected transverse presentations, we often find a sudden rupture of the waters to begin with, and then a cessation of pains for hours, and even days, as if Nature were waiting for the correction of the malposition before the womb could be allowed to go on with its contractions—a correction which, as he had elsewhere tried to show, would probably occur in primitive woman from the influence of a squatting posture.

Dr. King stated his decided belief in ovarian extra-uterine pregnancy, notwithstanding Tait's observations. It was easily explained: the ovisac ruptures, but without discharging the ovule, and the spermatozooids enter at the site of rupture. One case had been recorded of hernia of the ovary, in which, for years, the organ became swollen and tender at the menstrual periods, and later it began to enlarge and continued to grow, containing an ovum, which thus developed outside the walls of the abdomen and under the skin. The organ was thus subject to palpation long before, as well as during the beginning and progress of, the pregnancy.

DR. H. L. E. JOHNSON.—Did I understand Dr. Busey to say that the ovule became impregnated in the structure of the ovary? If there is anything settled, it is this question of ovarian gestation. Tait's researches and investigations prove to my mind, without a doubt, that such a thing never occurs. In all cases investigated he has shown that they were extra-ovarian. Even in cases so reported, investigation proved them to be erroneous, no ovarian tissue being found as a wall structure.

DR. FRY said he wished to contradict the statement of Dr. Johnson that Tait had conclusively demonstrated that ovarian pregnancy never occurs. Tait claims that impregnation always takes place in the tubes, and the ovum is arrested in its progress towards the uterine cavity; and denies that it ever happens upon the ovary or in the peritoneal cavity. This view is not accepted by the profession. All the American criticisms of Tait's work that Dr. Fry had read opposed the acceptance of his opinion on this question. The case reported by Dr. Thomas—and there are other cases equally conclusive—refutes the theory. In this case the placenta was attached to the colon, consequently could not

have been a total pregnancy primarily and an abdominal after rupture.

DR. H. L. E. JOHNSON. -The ovum, escaping into the abdominal cavity, could attach itself to any structure and become abdominal gestation. It would attach and receive nourishment from surrounding structures, just as the adhesions of a fibroid tumor supply it with nourishment and life.

DR. FRY said that Dr. Johnson, in his eagerness to defend the views of Tait, suggests explanations for the contradictory evidence that are directly opposed to the theories held by Tait himself. Dr. Johnson says we may account for the case mentioned by Thomas on the supposition that the ovum attached itself and grew to the colon after rupture of the tube. Tait claims that when the tube ruptures and the ovum escapes into the peritoneal cavity it invariably perishes. When the fetus continues to live after rupture of the tube, it escapes, not into the peritoneal cavity, but between the folds of the broad ligament. If it perishes in this case, it may suppurate, and the products be passed by rectum, vagina, bladder, etc.

DR. S. S. ADAMS said that in his investigations upon hernia of the pregnant uterus he had found one case where a fetus was removed from a hernial sac. It occurred in a young lady about 20 years of age, and was supposed to be a bubonocoele. Gouey, the reporter, in commenting upon this case, says he supposes the ovum after impregnation to have fallen into the abdomen upon one of the ligamenta teretia, which pass through the abdominal rings, where it found a dilatation of the peritoneum, and lodged in it by pressure of the bowels, and so formed a perfect hernia by itself, remaining in this part and growing to the size of a fetus three months old.

DR. FRY.—The case referred to by Dr. Adams was evidently one of rupture between the folds of the broad ligament, and the ovum followed the course of the round ligament.

DR. ACKER.—I had no reason to suspect the virtue of the lady. I had attended her in two other confinements, and the time of the morning sickness, quickening, etc., all corresponded with previous pregnancies. Then, again, the labor pains came on at the time the accouchement was expected, and the neck of the uterus was soft and the os open. This continued until the night the child was born.

Stated Meeting, May 17th, 1889.

DR. JOSEPH TABER JOHNSON, *President, in the Chair.*

DR. D. W. PRENTISS read the paper of the evening, entitled

CASES OF UTERINE FIBROID AND THEIR TREATMENT.¹

DR. SMITH mentioned a unique case. The patient is a lady 36 years of age, twice married, and now living with her second husband. She has never been pregnant; menses have always been scant, and during the past ten years have scarcely showed at all. During the last six or eight months there had been no discharge whatever until last week, when a single drop, as she says, appeared. She called at my office, and on examination I found a

¹ See original article, page 1263.

fibroid as large as the fist. The tumor has now increased in size one-third. The case is unusual in that it shows the development and growth of a uterine fibroid in a patient in whom menstruation and ovarian activity are apparently in abeyance.

DR. FRY asked Dr. Smith how he knew there was no ovarian activity.

DR. SMITH.—There were no *apparent* symptoms, only some vague sensations.

DR. FRY.—Was there anything periodical about the sensations?

DR. SMITH.—No.

DR. BUSEY.—What is the condition of her health?

DR. SMITH.—Excellent. She is well developed and robust.

DR. PRENTISS also presented one of his cases for examination.

THE PRESIDENT, having examined the patient, said: The conditions were the same as those of the second case in Dr. Prentiss' paper. She had two tumors on one side, two behind, and two on the other side. Her condition is an unhappy one, and she has a hard life to live. Her pelvis is full, the fibroids, extending to the umbilicus, have long pedicles, and there is constant danger of intestinal constriction. She has frequent attacks of pain; painful defecation with hemorrhage, and has to be accompanied by some one at these times. She is now prosperous, but would end her life if poverty should overtake her. When not in pain she is comfortable. He thought she should be operated upon. It was a case of rapidly growing fibroids with concomitant dangers. Death might result from hemorrhage, from kidney disease from pressure on ureters, or from pressure on other abdominal viscera. Her mother menstruated until she was 54; her sister, who is now 54, is still menstruating. He thought in her case it would be dangerous to wait for the menopause. The ovaries are probably so situated that they may not be reached without dangerously tearing surrounding tissues. He thought the operator should be prepared to perform hysterectomy; she might get on without operation, but he thought it doubtful. Hypodermics often produced nausea and wakefulness instead of quieting her. After considering all the dangers, he would take the responsibility of performing the operation.

DR. PRENTISS.—What is the mortality?

THE PRESIDENT.—Great, but her danger is also great.

DR. PRENTISS.—What per cent?

THE PRESIDENT.—Removing ovaries for the cure of fibroids, 95 to 97 per cent get well. In hysterectomy, death rates of *all* operators about 40 per cent.

DR. SMITH.—Greig Smith says it should not be more than 15 per cent in the hands of skilled operators.

THE PRESIDENT desired to set Dr. Smith aright as to specialists. There might be no mortality. Keith had 33 cases with 2 deaths; Bantock, 12 cases, no mortality. In his own cases, 5 in all, 3 died, but he meant to do better.

DR. SMITH agreed with the President that the mortality should not be over 40 per cent.

DR. FRY thought that in deciding upon operations the natural history of the disease should be considered. We know death is almost never caused by an excessive hemorrhage or takes place suddenly except in the worst cases. In the treatment of Dr. Prentiss' cases, he thought that two currents should not be used at one time, as they differ in their effect. One counteracts the effect

of the other. Anodes check hemorrhage, cathodes neutralize. We should always use the positive pole to check hemorrhage. When pain is produced, it is owing to the pole coming in contact with the cervix. He uses an electrode that is insulated, except at the point, which is made of platinum. Hemorrhage is often produced in fibroids by the presence of fungous endometritis, which may be cured by the use of the curette. He would like to correct a wrong impression made by Dr. Prentiss. Apostoli does not pass needles through the abdominal walls into tumors, as they may produce sloughing, septicemia, and death. He passes one pole into the uterus and places the other over the abdomen. In cases where the tumor is low down and at the side, he punctures through the vaginal wall. This woman is too old for operation, and we should wait for the menopause, which may cure her. This may be apparently delayed by fungous endometritis. Curette the uterine canal and you can check the hemorrhages. Aside from cases of strangulation of intestines from long pedicle of fibroid, and sudden death, there are two factors which produce trouble: first, hemorrhage; and second, pressure. Death is very seldom caused directly by either. The worst cases let alone do not cause eight per cent of deaths, or Keith's mortality.

THE PRESIDENT thought the argument of Dr. Fry against the operation, because of the near approach of the menopause, faulty; the patient might menstruate for nine or twenty years longer. He does not recommend hysterectomy for all cases of fibroids, but for such as cannot be cured otherwise. Oöphorectomy is a great boon in these other cases. He has performed six oöphorectomies in cases of fibroids, with success in all. Hysterectomy is suitable in cases where the woman's sufferings make her rather wish to die than live. Has performed five hysterectomies, with three deaths. Bantock's operation is very successful, but he has not succeeded in having no mortality. The operation requires time, patience, skill, and great resources.

DR. W. W. JOHNSTON.—The question to decide is, whether mortality is greater in those cases let alone or in those subjected to operation. What is our experience? Of a large number of fibroids we know of only one death; all have seen deaths from hysterectomy. Dr. Fry's argument is a good one. The mental attitude of a patient should be considered in deciding about operation. He cited the case of a lady with tubal disease who went to New York and consulted a prominent physician, who advised salpingectomy; a second, equally prominent physician, advised against operation; while a third agreed with the first. She declined operation, though she had at first decided to have it performed.

DR. PRENTISS, in closing, said he was glad of the extended discussion his paper had produced, but was disappointed with the opinions about operating. He thought the question not entirely decided. He thought oöphorectomy but not hysterectomy should be performed in this case, in face of the great mortality attending the latter. He could not agree with Dr. Fry as to the opinions he had advanced about electricity. The positive pole checks hemorrhage and relieves pain; the negative causes pain. The positive produces contractions and adhesions of the electrode to the endometrium, requiring the reversal of the current to release it.

ABSTRACTS.

1. Deipser: Hot Irrigations after Delivery (*Centralbl. f. Gyn.*, 22).—

Some believe that, in labor requiring neither repeated examinations nor operative interference, nothing should be done in the way of cleansing the parturient canal, and that only when there is a suspicion that infection has taken place should irrigation be employed. Immediately after delivery there are no objective signs that infection has occurred. The attending physician will anticipate any adverse criticism by acting on the assumption that in a given case there is likely to be trouble during the puerperium, and take such measures, as disinfection of the genital tract, as would seem likely to avert it; if he delays until the third or fourth day, and unfavorable symptoms occur, he will be likely to be censured for having neglected his patient. The question is, is the remedy harmless? Corrosive sublimate appears to be a dangerous remedy in some hands, while with others it is perfectly harmless; carbolic acid, for some reason or other, is not popular with either physicians or midwives; creolin seems to possess a future. D. recommends that after delivery, shortly after the birth of the placenta, and then for six days successively, irrigation with a quart of water of the temperature of 40° R. be practised. The temperature of the water does not allow of the multiplication of germs; the stream of water also clears the mucous membrane of blood clots and other foreign substances in the simplest manner possible. In using the ordinary disinfectants, the fluid is generally of the temperature of the blood. This may prove dangerous by relaxing the uterus. When the water is of the temperature of 40° R., it acts as an irritant and causes the uterus to contract, and may also be used in post-partum hemorrhage or to increase the pains. The method is harmless and always applicable. A portion of the hot water enters the uterus; this does no harm—on the contrary, it is capable of closing patulous blood vessels by direct irritation and through contractions of the uterus, at the same time removing any shreds of placental tissue that may remain behind.

D. has frequently employed this method, and has the best results to report. Water of the temperature of 40° R. is well tolerated by the vagina, but the external genitals should be protected against the stream. L. R.

2. Freund, H. W.: On the Treatment of Malignant Growths of the Ovary (*Zeit. f. Geburts. u. Gyn.*, XVII., 1).—

Among the many contra-indications to ovariectomy which have been brought forward in recent years, very few have survived; but one of them, which has its seat in the growth itself, has maintained its hold upon the profession, and that is the proven malignancy of the new formation. The time is past when it was thought improper to operate in cases where the malady was limited to the ovary. When the disease is generalized and attacks other organs, the boldest and most successful utterly condemn operative measures for relief. Only exceptionally, when insupportable suffering is to be relieved thereby, is the operation under these circumstances held to be justifiable. These are the prevailing views on the subject. The experience of F. at the Strassburg

clinic led to conclusions of an altogether different nature, and are so significant that he narrates in detail what has caused his change of opinion. F. accepts the classification of papillomata with malignant growths, at least on a clinical basis, for a papilloma when it ruptures pursues a similar course and has an equally baneful effect upon the system as if it were cancerous; this will, of course, increase the proportion of malignant growths which have their seat in the ovary. The author gives the history of a number of cases. A useful diagnostic factor is to be obtained from their study: In ten out of twelve cases there was a greater or lesser effusion of fluid into the pleura; this is not to be considered as due to pleuritis, but is a simple hydrothorax produced by the dissemination of the abdominal transudate through the lymphatics of the diaphragm into the pleural cavity. In most of the cases, however, malignant disease of the pleura through metastasis could be excluded. The symptom does not occur early in the course of the disease. Hydrothorax never affords a contra-indication to ovariectomy; it generally disappears very rapidly after operating. Papilloma is as often accompanied by hydrothorax as carcinoma or sarcoma.

In three cases of carcinoma the umbilicus was the site of predilection for metastasis to appear. In most of the cases (nine) the menses were uninfluenced by the development of the disease.

As regards the occurrence of secondary growths, as yet the most important contra-indication to extirpation, the cases detailed present entirely new phases. Two varieties of secondary tumors are to be differentiated. The ordinary metastasis, into the organs and tissues of the abdomen, especially the intestines, liver, parietal peritoneum, mesentery, etc., consists either of regional transportation of the primary growth to surrounding tissues or by extension through the blood and lymph; such tumors are generally marked with a capillary plexus, which insures their continued growth; the surroundings become infiltrated and succulent, and by their rapid growth and decomposition these tumors greatly menace life. Entirely different are the isolated or multiple secondary tumors found in the deepest portions of the peritoneal cavity. F. does not include them in the ordinary conception of metastasis; he believes that they are neither disseminated nor transported there by the blood or lymph, but that they *fall into* these situations as detached portions of the primary growth; these tumors differentiate themselves also anatomically from ordinary metastatic growths by the fact that they are so firmly bound to the peritoneum by strong connective tissue that only their upper brittle portions can be removed, and that in no case of the author's did a particle of blood make its appearance. These tumors also remain stationary in growth; they are simply foreign bodies which produce reactive inflammation when in the cul-de-sac of Douglas. F. would therefore not call this process metastasis, but implantation; their pathological significance, therefore, sinks out of sight; they may be never so numerous, yet do not contra-indicate a radical operation.

The unusually successful outcome of F.'s cases leads him to include even disseminated growths as coming properly under the class to be operated on, and proves to him that individuals suffering from diffused malignant growths may continue to live and thrive after complete removal of the same. F. thinks the key to success consists in the absolute removal, so far as possible, from the abdomen of fluids, a result not to be obtained by puncture but by laparotomy; as soon as this is accomplished, the diaphragm again sinks to

its normal plane, the lungs expand, pressure diminishes in the alimentary canal, in the ureters, and in the large abdominal vessels. The organism becomes rejuvenated by larger supplies of oxygen and by undisturbed processes of nutrition beginning in the alimentary canal, and by free elimination of waste matters.

Any one taking the position taught by the foregoing—i.e., to operate in cases of malignant tumors of the ovary, no matter how far advanced—should be a master of the technique of modern laparotomy, should be well posted in the details of resection of intestines, etc., and must not expect to operate in a rapid manner, and must assure himself of the *personnel* in charge of the after-treatment.

L. R.

ITEMS.

PROFESSOR P. MÉNIÈRE has been obliged by ill-health to give up the practice of medicine, and has transferred the management of the *Gazette de Gynécologie* to Dr. Philippeau, who will continue the *Gazette* on the plan pursued by its founder. Prof. Ménière has the sympathy of this JOURNAL in his enforced retirement, and his successor our best wishes.

At a meeting of the New York Obstetrical Society, held November 5th, the following resolution was unanimously adopted :

Resolved, That the members of this Society have learned with deep regret of the death of DR. ISAAC E. TAYLOR, one of its most distinguished Fellows. It is their wish to express here their high appreciation of his purity of character, his enthusiasm in promoting obstetric science, his lofty ideals, the kindness of his nature, his self-sacrificing disposition, and his warm-hearted benevolence.

In recalling his life and character, it is pleasant to remember that the deeds of good men live after them.

FORDYCE BARKER, M.D.,
WILLIAM T. LUSK, M.D.,
WILLIAM M. POLK, M.D.,

Committee.

The Board of Obstetric Surgeons of the New York Maternity Hospital have offered the following resolutions :

Resolved, That in the death of their late president, DR. ISAAC E. TAYLOR, the members of this Board have met with an ir-

reparable loss—the loss not only of a faithful and efficient colleague, but of a warm personal friend.

Resolved, That in his beautiful and serene old age they recognized the noblest type of the good physician, who retired from the active practice of his profession in the fulness of his fame and with the universal love and respect of his associates.

Resolved, That they extend to the family of the deceased their heartfelt sympathy, and that they will unite with them in cherishing his memory.

FORDYCE BARKER, M.D.,	HENRY J. GARRIGUES, M.D.,
WALTER R. GILLETTE, M.D.,	ROBERT A. MURRAY, M.D.,
WILLIAM T. LUSK, M.D.,	EGBERT H. GRANDIN, M.D.,
MONTROSE A. Pallen, M.D.,	HENRY C. COE, M.D.,

Consulting Surgeons.

Attending Surgeons.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

SIR:—Dr. Joseph Mies, of Cologne, Germany, a craniologist of considerable reputation, who has recently turned his attention to statistics of the newly-born, has written me, requesting my aid in obtaining statistics from maternity institutions in this country. He wishes to make as exhaustive a study of the subject as practicable, and will publish his results. He wishes more particularly length and weight of different portions of the body, in English or metric terms, with description in Volapük, German, or English.

I will, with pleasure, undertake the transmission to Dr. Mies of such matters as may be sent me, or they may be sent direct to "Herr Dr. Joseph Mies, Schildergasse, Köln (Rhein), Germany."

M. W. Wood,

Capt. and Asst. Surgeon U. S. Army,
Fort Randall, Dakota.

Oct. 7th, 1889.

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